University of Alberta

'Attitudes of New High School Graduates toward Apprenticeship Careers as First Choice Vocations

by

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of

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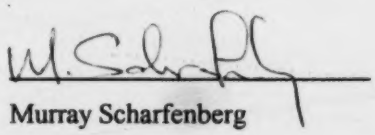

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Abstract

The current economic climate in Alberta has created a demand for skilled trades/technical people that can not be met with the province's current manpower resources. The skilled workforce is aging, and currently fewer than 10% of new high school graduates consider apprenticeship training as a career option immediately following graduation.

This study identified and examined the attitudes of new high school graduates towards careers in general, and in specific attitudes towards apprenticeship careers. The sample consisted of 70 male and female grade 12 students randomly selected from the graduating classes of five high schools in Northeastern Alberta. These students participated in either focus group interview or questionnaire sessions.

The study determined that the attitude having the greatest influence on the career decisions of new high school graduates is awareness, and that a definite lack of awareness about apprenticeship careers and the apprenticeship system exists. It is suggested that the academic vs. vocational paradigm that has influenced the decision-making processes in our schools for many years is the primary reason.

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ATTITUDES OF NEW HIGH SCHOOL GRADUATES TOWARD APPRENTICESHIP CAREERS AS FIRST CHOICE VOCATIONS

Chapter 1 - Introduction

Background to the Research Question

A dilemma currently exists in Alberta, and Canada in general. That dilemma is how to cope with the increased demand for skilled workers as a manifestation of an aging workforce and a rapidly growing technology based economy, while at the same time dealing with a youth unemployment level that is described as a "national crisis" (Careers the Next Generation, 1997, p. 1). According to the December 1999 Statistics Canada Labour Force Survey, the unemployment rate for the 15-24 age group in Alberta is 10.5%; this compares to a rate of 3.7% for the 25+ age group. Alberta has the lowest unemployment rates in Canada.

Over the next few years, over $30 billion dollars worth of new developments are planned for the province, but these projects are threatened by a shortage of workers in the skilled trades.

> Alberta must find 15,000 new skilled tradespeople within two years if it is to meet the growing demand for construction labour, says the executive director of the Alberta Construction Association. "There's

no way, if all the planned projects were to go ahead early next year", Merv Ellis said Monday. "Probably 30% would have to be cancelled for lack of skilled trades." (Ziegler, 1997, p. A1)

Many of these skilled trades are careers where Alberta's Apprenticeship and Industry Training System provides the training and certification. Unfortunately, few graduates are choosing to enter these apprenticeship careers upon completion of high school. In 1995, Alberta Advanced Education and Career Development conducted a survey of 1200 Edmonton area high school students. The findings indicated that 99% of these students intended to pursue some form of post-secondary education after graduation, but only 9% were considering apprenticeship training. Females in particular indicated minimal interest in apprenticeship careers. The survey suggests that there is a strong link between "not interested" and not knowing anything about the trades (Alberta Apprenticeship and Industry Training Board, 1996, p. 6). "It is a tragedy that tremendous opportunities exist on one hand while sizeable unemployment exists on the other (Parnell, 1985, p. 23).

The 1998/99 Alberta Apprenticeship and Industry Training Board Annual Report states that the majority of first year apprentices begin their careers at age 21 (mode), with the average age of first year apprentices being 28 (mean). Many individuals begin their apprenticeship careers during their thirties and forties, and a few in their late fifties and early sixties. The oldest new apprentice in 1998/99 was 62. This indicates that there is an average minimum gap of four to five years between high school graduation (the average person graduates from high school at age 17 or 18) and the decision to pursue an

apprenticeship career. At the same time, the average age of journeymen in the province is 48. These are significant factors indicating that the skilled labor pool is not developing early enough, and is aging at a rate that will be detrimental to the province's economic future.

> There is an unavoidable demographic trend coming that will, at some point, bring us to the limits of a labour pool, that until now, always seemed to be able to stretch further. Construction is a young person's game and the aging baby-boomer phenomenon is going to hit the construction industry hard. (Thompson, 1999, p. 35)
>
> "The need for skilled people is urgent," says Anne Cool, director, human resource development, Automotive Parts Manufacturers' Association. "We will have a mass of retirements occurring over the next 10 years. The skilled workers who came from Europe are reaching that age. Yet we don't have the right kinds of people to fill their places." (Acklands - Grainger, 1999, p. 5)
>
> Jim Utley, vice-president of human resources for mining giant Cominco Ltd., has warned that an aging workforce raises concerns about the availability of skilled tradespeople in the future. The problem is, barring a major influx of immigrants, there aren't enough younger workers to fill the shoes of aging baby boomers, let alone replace their skills and experience. Indeed, over the next two decades, there will be growing pressure to retain many of these

older employees beyond the normal retirement age of 65. (Cordon, 1999, p. 58)

As the workforce continues to age, we will see a growing shortage of skilled labour in many fields," says Glenys Schick, managing partner with Kelly, Luttmer & Associates, a Calgary organizational health consulting firm. (Corbett, 1999, p. 10)

Avram (1997) in a recent article in *Alberta Report*, makes the following comment:

Industry observers emphasize one point: Alberta must work harder at informing young people about the opportunities available in the trades - everything from plumbers to computer programming. This will mean abandoning the long-held belief that a university degree is the best route to success for career-minded youth, a doctrine that has led many teens to pursue liberal arts educations, leaving them well-read perhaps, but ill-equipped for the job market ... (p. 12)

In the same article, Alberta Advanced Education and Career Development Minister, Clint Dunford, makes the following statement:

There are two key areas we have to approach from an education standpoint. The first involves the parents themselves: secondly, the the guidance and school counsellors. Everybody intellectually acknowledges that there are good high-paying jobs in the skills areas, but when we ask parents where they want their son or

daughter to go, they say, "University". I think it's a throwback to the '50s or '60s. The boomers grew up almost indoctrinated that university was the way to go. (Avram, 1997, p. 13)

These sentiments are not new; in a September, 1977, address to the *Focus on Apprenticeship Symposium* in Ontario, Premier William Davis, made these remarks:

> Unfortunately, in recent times society has tended to regard apprentice and trade as static terms. They have looked elsewhere, to the professions and higher education in particular, for models worthy of imitation by themselves and their children. That is a pity, because nothing could be further from the truth - - the tradesman and his apprentice are still in the frontline of change and progress. (p. 13)

At the same symposium, Irene Johnson, Associate Executive Director of Training for the Canadian Employment and Immigration Commission supported Premier Davis's viewpoint:

> One of the comments that kept coming up again and again was the need for reorienting the perception of apprenticeship particularly in the minds of young people who make the choices between taking academic or skill courses. There was a sense of unease about whether apprenticeship is leading to a really satisfying, rewarding career, a feeling that the image of apprenticeship should be given more publicity, and that it should be discussed more often as a good career alternative. (p. 111)

In a keynote address to the Canadian Lifelong Learning Lyceum in October, 1998, Judith Robertson, Chair, Canadian Council of Directors of Apprenticeship, made the following statement:

> Apprenticeship is not necessarily well known to many people. Often, it evokes only a vague notion of workers who are carpenters or maybe stone masons – with building things, with crafts, with people who work with their hands. And that image is not wrong at all. It simply doesn't tell the whole story. (Robertson, 1998, p. 5)

Walsh (1989) conducted a study entitled, *The Skilled Trades and Career Selection Research Project, Final Report to the Kitchener, Waterloo and Guelph Training Advisory Council*. This 1988 study includes a survey of high school students and their attitudes towards skilled trades. He found that they are aware of the desirability and advantages of skilled trade occupations, but do not see them as relevant to their futures.

> It is a paradox that in the face of persistent labour shortages in skilled occupations, which offer both job security and upper wage rates, that there is so little apparent interest by school leavers in Skilled Trades career paths. There were five principal findings presented in the final report of the Skilled Trades & Career Selection research project.

1. There is a chronic misfit between expectation and reality with regard to post secondary education continuation rates.

2. There is a high awareness and acceptance of positive Skilled Trade occupation attributes in both Parent and Student populations.
3. There is low job knowledge about, and low interest in, Skilled Trade occupations particularly in student populations.
4. The Apprentice/Journeyman experience is extremely positive.
5. There is substantial potential for recruitment into Skilled Trade occupations in the student populations.

Student expectations are overwhelmingly oriented to post secondary education and not to work force entry. Approximately 70% of all respondents indicate that on leaving high school they intend to enter University or Community College. For female respondents the corresponding figure is higher with over 75% indicating that they expect, on leaving High School, to enter post secondary education. Less than 10% of Females and 17% of Males believe they will enter the workforce on leaving High School. Specifically in terms of Apprenticeship, 6.9% of Males and 1.4% of Females identify this career path as their expectation on leaving School. (Walsh, 1989, p. 23)

Matheson (1997) suggests that the major reason is a "lack of awareness that these opportunities exist" (p. 6). Cook and Alexander (1979) state that "...aspirations at the end of high school often remain quite unrealistic, and information about occupations and the way the labour markets work is often quite skimpy" (p. 26).

The Business and Industry section of the Growth Summit report elaborated

on this theme.

> There is a need to incorporate essential employability and global competitiveness factors related to knowledge, skills and attitudes required by workers (and youth) that will contribute to and sustain growth. Without properly preparing our youth for work, we will continue to have high youth unemployment while business will be forced to bring in workers from outside Alberta or export these jobs.
>
> The report points out: "seven out of ten high school graduates do not go on to post-secondary education immediately after graduating. Four out of ten receive no post-secondary education at all. Greater attention needs to be given to these youths who are bright and capable people, but are having increasing difficulty making the successful transition from school to work." (Careers the Next Generation, 1998, p. 1 & 2)

Research Question

What attitudes are identified by new high school graduates that influence their career decision making, and in particular to pursue or reject apprenticeship careers as first choice vocations?

Research Sub-questions

1. What attitudes influence new high school graduates choice of career?
2. What awareness do new high school graduates have with regard to apprenticeship career opportunities and apprenticeship training in general?

3. What attitudes influence new high school graduates to pursue apprenticeship careers as first choice vocations?
4. What attitudes influence new high school graduates to reject apprenticeship careers as first choice vocations?

Definition of Terms

Apprenticeship Careers - this refers to the 50 designated trades, and 4 designated occupations legislated under Alberta's Apprenticeship and Industry Training Act. **See Appendix A.**

Attitudes - "Our attitudes are like compasses of behavior pointing us in certain directions of thinking and ways of acting (Dickson, 1995, p. 6). " We conceive of an attitude as a collection of cognitions, beliefs, opinions and facts (knowledge) and as including positive and negative evaluations (feelings), all relating to and describing a central theme or object - the subject of the attitude. This knowledge and feeling cluster tends to produce certain behavior" (Freedman, Carlsmith, & Sears, 1970, p. 248).

Awareness - "... fundamental attributes of human awareness - perceptions of time, space, categories, and causality - as collective representations arising from social experience" (Caplow, 1971, p. 173).

Career/Vocation - refers to the employment, profession, occupation, or trade of an individual (Oxford Dictionary, 1996).

Decision Making - "A process that is designed to assist persons in making personally satisfying decisions and that includes these components: (1) exploration and clarification of personal values, (2) use of the data about self and the environment, and (3) study of

the decision process and strategies. The process includes these steps: (1) recognizing the need for a decision, (2) exploring alternative choices, (3) predicting the probable outcome of each choice, (4) assigning personal values to each choice, (5) determining the cost of each choice, (6) making a decision, (7) implementing the decision, and (8) evaluating the outcomes of the decision (Kotrlik & Harrison, 1986, p. 4&5).

First Choice Vocation – for the purposes of this study, it is defined as the initial career choice following high school graduation.

Influence – "This means to affect or alter the character, conduct, or thought, to have an effect on the condition or development of an individual in regard to career decisions" (Kotrlik & Harrison, 1986, p. 5).

High School Graduate – for the purposes of this study, the high school graduate is defined as a student who is eligible to receive the Alberta High School Diploma as a result of completing the legislated graduation requirements in the 1998/1999 school year. **See Appendix B.**

Significance of the Research Question

High school graduation is a milestone that every young adult yearns for with great anticipation and trepidation. It is the culmination of 12 or more years of formal education that is designed to provide the graduate with the tools required to make future decisions that will guide their lives. One of the most important decisions to be made is that of career. "The major factor with which senior high school students must deal is the imminence of reality as defined by the rapidly approaching separation from senior high school and the independence of young adulthood" (Herr & Cramer, 1984, p. 256).

Today, young Albertans have thousands of challenging and rewarding career opportunities to choose from after graduation.

This research project identifies the attitudes that have a positive or negative influence on the career decisions of new high school graduates, and in particular apprenticeship careers as first choice vocations. It is hoped that the results will provide useful information that may be utilized to develop strategies to increase the level of participation of new high school graduates in apprenticeship careers, thus improving the skilled labour force profile of the province, and assisting in reducing the youth unemployment rate.

Assumptions

This research project is based upon three assumptions:

1. Grade 12 students expected to graduate in the current school year are actively involved in the career decision making process and would be the best subjects to provide useful data on the research question. "More twelfth grade students (24.5%) indicated that they had decided on a career in the twelfth grade than in any other grade" (Kotrlik & Harrison, 1968, p. 44). However, according to Cook and Alexander (1979) many graduates have devoted minimal time and effort in making career decisions.

> ... a fourth of adolescents were not giving serious consideration to their future careers, even at a point three to five months prior to graduation from high school. (p. 274)
>
> ... fewer than two-thirds of these youth, even as late as the senior

year of high school, have given serious thought to their occupational careers and could articulate their thinking with sufficient detail to permit its translation into categories of the detailed occupational classification of the Bureau of Census. (p. 276)

2. New high school graduates have little or no knowledge, awareness, or interest in the career opportunities available through apprenticeship training. According to the 1996 Alberta High School Graduate Survey, only 4% of the respondents indicated that they planned to enter an apprenticeship.
3. Significant negative attitudes exist towards apprenticeship careers that influence new high school graduates decisions to reject them as first choice careers.

   First, apprenticeship suffers from a stigma. The term is associated with the trades, with "blue collar" work. In many respects, we have a culture in Canada that does not respect the skilled trades; our systems and expectations are geared to academics, to the professions, to "white collar" work. This perception of apprenticeship has tended to undermine our ability to market the opportunities and the model. (Robertson, 1998, p. 9)

Delimitations

This study made no attempt to evaluate the influence of other persons (parents, teachers, school counsellors, etc.) on the career decision process. It is acknowledged that the attitudes and influence of others are an important factor in attitude formation, and therefore have an impact on career decision making.

The study involved only those high school students (Grade 12), identified by their respective schools, who were expected to fulfill the requirements for graduation in the 1998/1999 school year. Students who were expected to graduate with the Integrated Occupational Certificate of Achievement did not participate. Although this credential permits graduation, it does not meet the prerequisite entry standards required by the majority of apprenticeship programs. However, it is acknowledged that some Integrated Occupational Certificate recipients and high school non-completers enter into, and successfully complete apprenticeship programs.

Limitations

The assumptions that new high school graduates are actively involved in career decision making, or have limited knowledge, awareness, or interest in apprenticeship careers, may have had an impact on the ability of the research sample to provide useful data.

The Alberta Freedom of Information Privacy and Protection Act (FOIPP) added an additional dimension/barrier to the study. FOIPP legislation did not allow for the participating schools to provide class lists for the purpose of making direct contact with the students and selecting a sample of participants. The steps involved in selecting a sample population are described in Chapter 3, and resulted in a lower level of participation than hoped for.

The possible interaction between the study participants during the interview and questionnaire processes, as well as the nature of the questions may also had an influence on the data.

Summary

Currently Alberta and the rest of Canada are trying to cope with a youth unemployment problem and at the same time a growing shortage of skilled tradespersons; both of these issues have and will have a major impact on the social and economic fabrics of the province and this country. Many of the unemployed youth are recent high school graduates who have not pursued some form of post-secondary education. With the current demand and the projected future demand for skilled workers due to the aging population, why do so few new high school graduates consider apprenticeship careers as first choice vocations?

Figure 1. For Better Or For Worse Cartoon

BRIAN, YOU'RE GONNA GO INTO CHEMISTRY OR SOMETHING, AREN'T YOU?
...OR SOMETHING.
WHAT ABOUT YOU, GORD?
I DUNNO.... I THINK I'LL PROBABLY STICK TO BEING A MECHANIC.
COME ON, MAN - YOU'VE GOT THE MARKS! YOU COULD BE A LAWYER - YOU COULD, YOU KNOW ... GO PLACES!!
MAYBE.
BUT NOBODY GOES ANYWHERE IF THEY DON'T HAVE A GOOD MECHANIC!

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Chapter 2 - Review of the Related Literature

Introduction

To examine the influence attitudes have on the career decisions of new high school graduates, and in particular towards apprenticeship careers as first choice vocations, the following sources of literature were consulted: the University of Alberta Library Collection, the Portage College Lac La Biche Library Collection, the Educational Resources Information Center (ERIC) Database, Alberta Government Publications, the Internet (primarily using the Alta Vista Search Engine), and periodicals, journals, magazines, newspapers.

A search of the previous literature has uncovered no literature specific to the research question. In fact, there appears to be minimal research of any kind related to apprenticeship training. "... the review of literature has revealed a scarcity of studies in the area of attitudes towards technical/vocational subjects" (Mandevu, 1989, p. 24). However, literature closely related to the research question is reviewed here.

Attitudes

What is an attitude?

It is the advance of men of our true selves

Its roots are inward, but its fruits are outward

It is our best friend or our worst enemy

It is more honest or more consistent than our words

It is a thing which draws people to us or repels them

It is never content until it is expressed

It is the librarian of our past

The speaker of our present

The prophet of our future.

Ed Walker

(Walker, cited in Dickson, 1995, p. 28)

Caplow (1971) states that our attitudes predispose us to act in a given way in a given situation, and that "the clusters of beliefs that make up an attitude are held in sufficient conviction, consciously or unconsciously, so that one's response to a situation is determined in advance." Our attitudes also embody values, "most of them derived from one's relatives, friends and other associates" (p. 21).

Postlethwaite (1997) elaborates further:

> "... an attitude is a state of readiness, tendency to respond in a certain manner when confronted by certain stimuli. [sic] Attitudes are reinforced by beliefs (the cognitive component) and often attract strong feelings (the emotional component) which may lead to particular behavioral intents (the action tendency component). (p. 1)

Our attitudes towards a "central theme or object" (Freedman et al., 1970, p. 248) are "feelings expressed by our behavior" (Dickson, 1995, p. 7). Attitudes develop over years of experience, sometimes they serve us well, while at other times they may lead us astray. Dickson (1995) believes our attitudes can "inhibit us from accomplishing goals that otherwise would be attainable" (p. 7).

The intensity with which attitudes are held will vary between different themes or topics. "... some attitudes go much deeper than others and touch upon a person's fundamental philosophy of life, while others are relatively superficial" (Oppenheim, 1992, cited in Postlethwaite, 1997, p. 1).

Career Opportunities and Decision-Making

> Until well into the twentieth century only a small percentage of the population had the luxury of being able to choose the work they would do. Most people had few career options. Women were expected to raise children and look after a home. Men usually followed in their father's occupations, most joining other unskilled or semi-skilled workers in farms or factories.
>
> Since World War II, this condition has changed. The workforce has moved away from farms and , since the 1950's, away from factories. New occupations have opened up. There has been a dramatic increase in the range of occupational choice available to most people. [sic] Yet most people are largely unaware of the breadth of career opportunities that are open to them and never take the time to examine alternatives to the direction they are already going. (Meltz & Meltz, 1992, p. 21)

Powell and Bloom (1962) conducted a study to "investigate the vocational plans of adolescents, to determine the objectivity of their choices, to discover the motivational forces operating within vocational outlook ..." (p. 126). A questionnaire was

administered to approximately 1000 high school students in grades ten, eleven, and twelve, with ages ranging from 14 to 19 years. Seven questions were asked, with the results as follows:

1. *What occupation would you like to enter assuming that you have financial resources, ability and freedom of choice?*

The occupations stated by the boys covered over 50 different fields with 33 of the named occupations ranked at the professional level. These include engineering (23.3%), medicine (5.6%), scientific research (4.1%), aviation (4.1%), and business (4.1%). Occupations from the skilled labor level include electrician, carpenter, television serviceman, and automotive mechanic.

Girls named about 35 different vocations with 33 of these holding professional status. The most common selections were office work (21.6%), teaching (15.0%), and nursing (13.7%). Other occupations include journalism, modeling, dramatics, fashion designer, interior decorator, physical therapist, lawyer, librarian, and social worker. There were no references to skilled labor level occupations.

2. *What occupation do you really expect to enter?*

The study indicated a general trend towards the professional occupations, especially among boys. More girls intended to enter clerical-sales level vocations. Cook and Alexander (1979) made a similar conclusion in their study. They determined that "male aspirations are aimed toward higher status positions and females towards lower status ones" (p. 308 & 309).

3. *Do adolescents expect to enter the vocations they prefer?*

The researchers concluded that by the twelfth grade, 67% of adolescents intend on entering into their preferred occupation.

4. Why do you prefer to enter this vocation?

The following motivating factors identified by the researchers are very closely related to the attitudes this study expected to identify:

Table 1

Motivating Factors Influencing Career Choice

Factor	Male	Female
Interest in work	36.2%	27.4%
Ability to do work	6.1%	4.3%
Interest in people	3.4%	15.2%
Personal advancement	7.0%	3.9%
Offers security	11.9%	6.0%
Service to others	5.3%	17.4%
Adventure and travel	4.3%	5.1%
Plan to marry	0.1%	5.8%
Previous experience	3.6%	2.6%
Social prestige	0.6%	0.7%
Same work as father	3.3%	0.5%
Parental Influence	1.6%	1.0%

5. Who has influenced you in your selection of a vocation?

The majority of students indicated that they had not been influenced by anyone in their career decision.

6. *Have you had vocational counseling? By whom? Did it help in the selection of a vocation?*

44.6% of boys and 52.2% of girls indicated that they had received career counseling with teachers (27.5%), school counselors (21.1%), and parents (17.0%) being the primary guidance. 45.7% stated the counseling was of positive assistance, 12.5% reported the counseling was of little help, and 40.2% stated the counseling was of no assistance in career selection.

7. *What factors do you consider of importance in a vocation?*

These factors relate closely to the motivating factors identified in question number four:

Table 2

Factors Considered Important in a Vocation

Factors	Males	Females
Financial reward	13.43%	8.87%
Security	8.37%	6.37%
Working conditions	5.77%	4.55%
Ability to do job	6.95%	8.99%
Knowledge of the job	8.93%	3.30%
Advancement	6.56%	5.80%
Social prestige	1.66%	1.14%
Need of education	2.92%	2.28%

Interest in work	8.53%	8.65%
Satisfaction	3.32%	4.21%
Happiness	2.69%	4.55%
Enjoyment	13.43%	15.81%

The study discussed a number of problem areas related to the career decisions of high school students in its concluding comments:

1. High school students are frustrated in the intelligent selection of a career because of their lack of knowledge of vocational fields. This limits their selection of opportunities, which in turn inhibits their ability to choose an appropriate occupation.
2. Adolescents are not aware of their motives for selecting vocations. They do not recognize the inconsistency of their motives and abilities.
3. Although there is an emphasis on career guidance in school, it appears that adolescents have had little guidance and that it is seldom effective.
4. This lack of effective vocational guidance and the inability to recognize the difference between motives and ability prevents the student from establishing realistic career objectives.

Cook and Alexander (1979) conducted a research study on in school career development and its consequences for youth work experience in the first few years after high school graduation. Their study offers the following information:

- "The occupational aspirations of senior high school students do not appear much more realistic that might be expected [sic] in early adolescence" (p. 34).

- "Students expressed aspirations likely become more reality-oriented over time as important transitions are approached and actual prospects for success become clear. This greater realism likely derives as much from accurate perceptions of opportunities as it does from self-appraisal of interests and abilities" (p. 35).
- Student interests are the most important determinants of occupational preference.
- The following intrinsic and extrinsic occupational returns or "rewards of work" were identified: compensation/earnings, prestige, power, autonomy, associations, satisfaction, responsibility, social benefit, advancement, security, ability utilization, activity, creativity, variety, achievement recognition, co-workers, supervision, working conditions, authority, social status, independence, routine, and complexity (p. 188).

Kass (1978) examined the role of gender and sex- role attitudes on career decision making. For this study he used the career decision making (CDM) model of Tiedeman and Miller (1972). This four-step model is as follows:

1. Exploration – unrestricted exploration with vague ideas and concerns about a decision, but having no developed strategy.
2. Crystallization – progress begins by evaluating alternatives and narrowing down the options based upon previous experience and future expectations.
3. Choice – a definite commitment is made to a particular goal. This accompanied by relief and optimism about the future.
4. Clarification – the consequences of the choice are elaborated by beginning planning and follow-through activities.

Kass (1978) concluded that gender and sex-role attitudes affect the decisions concerning a career only insofar as they influence the student's progress through the four stages of the CDM model.

> These results call into question the assumption that sex-role attitudes influence career decision making. Rather, decision making style and progress in the decision making process influence sex-role attitudes (p. 17).

Mandevu (1989) examined pupils and parents attitudes towards technical/vocational subjects at the high school level. He determined that attitudes towards "vocationalized education" are "less than favourable", with "value placed on academic education" and "low status" on technical vocational education (p. 13). Vocationalized education "refers to those practical subjects which are likely to generate among the students some basic knowledge, skills and dispositions that might prepare them to think of becoming skilled workers or to enter other manual occupations" (p. 17).

> It is argued that academic education does not encourage people who do not get white-collar employment to lead productive lives, that it gives people false aspirations and creates contempt for trades, crafts, manual work and agricultural work (p.18). [sic]
>
> ... as long as vocationalized education is not seen by students to lead to well-paid occupations and high status in society, that as long as employers prefer and reward academic education then these subjects in school will remain unpopular (p. 20).

In the study sample of 200 students, 54 (27%) indicated negative attitudes towards vocational/technical subjects. 75 (37.5%) indicated positive attitudes, and 71 (36%) indicated attitudes that were either positive or negative. A Likert scale questionnaire and interviews were used to collect the data. The study also found no correlation between the parent/guardian aspirations for the pupil and the pupil's attitudes towards vocational/technical subjects.

Kotrlik and Harrison (1986) conducted a study of over 19,000 Louisiana high school students to determine the factors that influence them to enroll or not enroll in vocational courses at the secondary level. The information would then be used by teachers, counselors, and administrators to encourage increased enrolment in these programs.

The study determined that the attitudes towards vocational education held by parents and counselors were more positive than those held by students. The percentage of students with a favorable attitude towards vocational education increased as their experience in vocational education increased. One third of non-vocational students have unfavorable attitudes towards vocational education. Less than 10% of students reported being encouraged to choose a technical/vocational career.

The study also asked questions in relation to career decision making. Three major factors were identified in the career selection process: interest in the work (86.9%), salary or wages (87.5%), and working conditions (82.5%). Other factors identified included: availability of jobs, work experience, status and reputation of the occupation, costs required for career preparation, length of time for training, fringe

benefits, indoor or out door work, insistence of parents or relatives, friends or relatives working in the occupation, personal satisfaction, special talents or abilities, available financial backing, contribution to society, and family tradition. "The results indicated that most of the youth studied had misconceptions about the training and educational requirements for their career choice" (p. 13).

Crites (1969, cited in Herr & Cramer, 1979) concluded that about 30% of students are undecided about their occupational choices during their high school years. Hecht and Traub (1974) state that the majority of high school students are preoccupied with going to college and that high school counselors often equate career counseling with college counseling.

Mitchell (1977, cited in Herr & Cramer, 1979) completed a study of 37,500 17 year-old boys and girls from across the United States. He found that prestige and status were cited more than twice as often as challenge, responsibility, personal satisfaction or advancement opportunity as reasons for making occupational choices. He also determined that more than 2/3 were considering professional careers.

Hecht and Traub (1974) suggest that there are two areas to examine when making career decisions, "the world at large, and the world of you" (p.47).

> The world at large offers thousands of variations and choices, but there is only one you; [sic] By the time you finish high school, certain things are pretty well set; what you like and dislike, what you're interested in, your reactions to certain typical situations. Every decision you make will be

governed by these relatively stable factors. Of course, as you encounter new experiences and ways of life, there will be changes. (p. 47)

They identify four major categories which should be utilized to explore career inclinations: interests, abilities, temperament, and values.

1. Interests - four ways are recommended to approach the question of interests:
    - Introspection - looking inside yourself and examining all the things you've been exposed to, and identifying what you prefer.
    - Objective Approach - examine how you spend your free time. This helps to reveal what you prefer to do, but also how much initiative and energy you devote to the activities.
    - Outsider's Point of View - canvass your friends, teachers, parents, etc. They can assist you in determining the energy, conviction and dedication you place on your activities from their perspective. They may know you better than you know yourself.
    - Interest Tests and Inventories - numerous check lists and inventories have been developed to assist you in comparing your interests and their relationship to the different occupational fields.
2. Abilities and Aptitude - having an interest in something, doesn't always mean that you do it well. When looking at career options, it's important to determine what level of ability and aptitude you actually possess. Measurement tools include:
    - Achievement Tests - these include the ordinary exams that are utilized on a regular basis in schools to assess learning and the standardized tests

administered to large groups of students that compare achievement across grade levels.

- Aptitude Tests - these tests are designed to measure not only what you know about a particular subject or skill, but your capacity to master it.
- School Grades - considered by many as a good indicator of your abilities and aptitudes. Still the main criteria for entrance into post-secondary study.
- Physical Qualities Evaluation - many occupations have physical requirements that must be met in order for you to consider them as possible careers.
- Hobbies - an excellent indicator of what you really like to do and how well you succeed at it.
- Special Skills - these include assets that are often overlooked when making career decisions. These include everything from musical abilities, to sewing, cooking and other talents.

3. Temperament - this term defines the emotional and rational behavior patterns that characterize individuals. When making career decisions the tendency is to "realize the ideal self" (p. 55). To be successful in the career search, we need to "modify this approach in terms of what we can really do" (p. 55).
4. Values - it is essential to recognize the powerful influence our values have on our decision-making processes. "When it comes to translating values into specific courses of action, people often go to extremes" (p. 60). Six basic groups of values are identified:
    - Economic - values concerned with income and working conditions.

- Aesthetic - values concerned with form, harmony and beauty. Career needs to provide the opportunity to express one's own taste and judgment.
- Theoretical - values related to the concept of truth, particularly in relation to scientific study and research.
- Spiritual - values associated with religious feeling; often associated with aesthetic values.
- Social - values concerned with interpersonal relationships between people.
- Political - values reflected by the need for dominance and power.

An individuals "work and their lifestyle may not reflect all of their values to the maximum degree. They try to live by the most important ones" (p. 60).

Perrone (1973, cited in Herr & Cramer, 1979) conducted a seven year longitudinal study of grade 11 and 12 students. In relation to values and career decisions, he found that these students "expressed rather constant value levels of three types: security, affiliation, and independence" (p. 260). Hale and Fenner (1972, cited in Herr & Cramer, 1979) state that "students generally gave priority to work that is steady and dependable, pays well, permits the use of personal skills and interests, and benefits other people" (p. 260).

In regards to career decisions and vocational education (which includes apprenticeship training), Herr and Cramer (1979) state the following:

> From a career guidance standpoint, the important thing to remember about vocational education is that it has been seen for too long as useful to only a highly restricted sample of the total student population rather than to all

or most students. Its image has been that of a second class alternative for those with low verbal skills or for those with interests in working with their hands rather than with their minds. [sic]

Regardless of the reasons for the situation, many students who desperately need what vocational education can offer have been blocked from this access. Such a condition has added fuel to the arbitrary separation of students into the supposedly homogeneous categories of college bound and non - college bound, with the educational experiences offered each group seen essentially mutually exclusive.

The means of releasing more of the potential contribution of vocational education to career development and, indeed, to career guidance lies not in assigning or recruiting more students for a vocational education track but in making vocational education an equal partner with all other aspects of the educational process. All the relationships between "general education" and career development that have been suggested throughout this book apply to vocational education with equal force. They must be incorporated into the reshaping of the many thrusts of vocational education in such a way that the lines, or at least the images, that presently separate vocational education and general education are made to blur or vanish. (p. 278 & 279)

Burton (1997) supports the findings of Herr and Cramer:

When Michael entered high school, his parents had high hopes that he would someday make it to university, maybe even enter a profession. Recognizing a bright student, his school guidance counsellor encouraged him to pursue the arts and sciences. Michael dropped out after his second try at grade 11. [sic]

After dropping out of high school, Michael moved from employer to employer, never finding real job satisfaction. At age 23 and with a young family to support, the opportunity to return to school fill-time just didn't exist for Michael. Instead, he opted to register for apprenticeship training. [sic]

As a qualified tradesperson and independent businessman, Michael earned just over $57,000 last year and loved every minute of it. (p. L10)

Senior High School Graduation in Alberta

In order to prepare students for the transition into the adult world, Alberta Education has defined the following aim, goals, and program requirements of Senior High School education:

- Aim –"The aim of education is to develop the knowledge, the skills and the positive attitudes of individuals, so that they will be self-confident, capable and committed to setting goals, making informed choices and acting in ways that will improve their own lives and the life of their community." (Junior-Senior High School Handbook, 1986-87, p. ix)

- Goals - "Senior high school programs should provide the opportunities for students to:
  - ⇒ complete the development of basic skills, if necessary through modified instructional activities or through alternative programs;
  - ⇒ extend and refine intellectual and other skills in preparation for entry into post-secondary education;
  - ⇒ choose courses that will lead to the fulfillment of personal aspirations;
  - ⇒ acquire specialized knowledge, skills and positive attitudes required for direct entry into the work force;
  - ⇒ become confident, competent and responsible individuals ready to assume the role of contributing members of society." (Junior - Senior High School Handbook, 1986-87, p. x)
- Program Requirements - Priority should be given to offering a high school program that enables students to:
  - ⇒ meet diploma requirements (see the Senior High School Graduation Requirements section) **See Appendix B.**
  - ⇒ earn a minimum of 100 credits in three years
  - ⇒ have some opportunity to take complementary courses
  - ⇒ enter post-secondary institutions or seek employment (Guide to Education, 1997)

Apprenticeship Careers and Training in Alberta

The most ancient and respected of all vocational training systems is the apprenticeship. In primitive tribes the witch doctor trained his successor through apprenticeship. Leonardo da Vinci mastered his painting skills as an apprentice to another artist. In the Middle Ages, the apprentice was almost an indentured servant, starting as young as nine, living and working with his teacher until he could produce the "masterpiece" which would be accepted as signifying his mastery of his craft. Today, while the contract under which an apprentice works is still called an indenture, he is a well-paid, independent and respected member of the working community. [sic]

Like a college education, completion of an apprenticeship program does not come easily. A graduate apprentice has earned what is the equivalent to a degree in his craft. It has taken him between three and six years of classroom study, on-the-job training and actual experience in every kind of work situation, every aspect of the field. [sic] The ultimate goal of the apprentice is to become a "journeyman" - a full-fledged, certified master of his craft. (Hecht & Traub, 1974, p. 133)

Definition of Terms Related to Apprenticeship Careers

Apprentice - an individual who has met the requirements to enter an apprenticeship program for a trade and is indentured (contracted) to an eligible employer, and the contract is registered with Alberta Learning.

Compulsory Certification Trade - an individual is required by legislation to hold a Journeyman Certificate or be a registered apprentice in the trade. **See Appendixes A and C.**

Journeyman - an individual who has achieved the standards of performance, fulfilled the training established for the trade, and has been granted a Journeyman Certificate by the Minister.

Optional Certification Trade - an individual is permitted to work in the trade if he or she has the knowledge and skills expected of a certified journeyman in that trade. **See Appendixes A and C.**

Trade - an occupation designated by the Lieutenant Governor In Council, pursuant to the *Apprenticeship and Industry Training Act* based on the recommendation of the specific industry, the Minister of Alberta Learning, and the Alberta Apprentice and Industry Training Board. Trades may be designated as compulsory certification or optional certification trades. Each trade has established skills and competencies and an established training program. (Current Context & Selected Trends, 1996)

Alberta Apprenticeship Model

Current Context and Selected Trends (1996), a publication of the Alberta Apprenticeship and Industry Training Board, describes the structure of apprenticeship and industry training system as it currently functions. The *Apprenticeship and Industry Training Act, 1992* and the 63 regulations included in *Appendix 1*, provide the regulatory framework for apprenticeship and industry training in Alberta.

> The Act establishes the Alberta Apprenticeship and Industry Training Board (the Board) as the body responsible for advising the Minister of Advanced Education and Career Development (now known as Alberta Learning) on Alberta's need for skilled labour and on the training required for certification in a trade or occupation. (Alberta Apprenticeship and Industry Training Board, 1996, p. 3)

Along with the Board, employers, employees, training institutions and government all play important roles in this educational system, with employers playing a major role through the Provincial and Local Apprenticeship Advisory Committees.

The 50 designated trades are categorized into six different trade groups:

1. Architectural Construction Trade Group – Bricklayer, Cabinetmaker, Carpenter, Concrete Finisher, Crane & Hoisting Equipment Operator, Elevator Constructor, Floorcovering Installer, Glazier, Lather-Interior Systems Mechanic, Painter & Decorator, Roofer, Tilesetter.
2. Electrical Trade Group – Communication Electrician, Electrical Rewind Mechanic, Electrician, Electronic Technician, Power Lineman, Power System Electrician.
3. Mechanical Trade Group – Gasfitter, Instrument Mechanic, Insulator, Plumber, Refrigeration & Air Conditioning Mechanic, Sheetmetal Worker, Sprinkler Systems Mechanic, Steamfitter-Pipefitter.
4. Metal Trade Group – Boilermaker, Ironworker, Machinist, Millwright, Sawfiler, Structural Steel & Plate Fitter, Welder.

5. Vehicle & Related Trade Group – Agricultural Mechanic, Auto Body Technician, Automotive Service Technician, Heavy Equipment Technician, Motorcycle Technician, Partsman, Recreational Vehicle Service Technician, Transport Refrigeration Mechanic.
6. Other Trade Group – Appliance Service Technician, Baker, Cook, Hairstylist, Landscape Gardener, Locksmith, Printing & Graphic Arts Craftsman, Water Well Driller.

An apprenticeship-training program takes from two to four years depending on the trade. Apprentices begin training by finding an employer in their chosen trade who is willing to hire them and indenture them as an apprentice. Many trades have specific educational prerequisites that must be met by the prospective apprentice, with the majority now requiring high school graduation. Other trades require all candidates to write an entrance exam regardless of prior educational attainment. The apprentice will spend approximately 80% of his/her training on-the-job under the direct supervision of a qualified journeyman, and 20% attending a technical school for the formal instructional component. Depending on the trade, technical training takes place in blocks of time, usually eight weeks each apprenticeship period. This training takes place at one of the province's technical institutes or colleges. The pass mark for apprenticeship programs is 70%. Once the apprentice has completed all the requirements for certification, he/she becomes a journeyman.

The term journeyman has the same origin. It meant a worker who had learned his craft, who was fully skilled, no longer an apprentice of

> indentured status. Interestingly, however, the term means, literally, one who has embarked on a journey through life, honing and applying his expert skills. (Robertson, 1998, p. 5)

In thirty-eight of the fifty apprenticeable trades in Alberta, the apprentices write the Interprovincial Red Seal Examination. This enables the qualified journeyman to work in any province or territory in Canada without further examination. The pass mark for the interprovincial examinations is 75%.

Rainsforth (1991) examined the evolution of Alberta's apprenticeship system and the related legislative enactment's from 1905 to 1990. He identified that although apprenticeship training has had close to fifty years of formal recognition since its organization in 1944, no researcher had documented this development.

> It became evident during the literature search that the amount of educational research completed on Apprenticeship in Alberta is not overwhelming. There are few researchers in the province who have completed research in the area of vocational and technical education. These researchers, in some cases, included a limited amount of information on apprentice training. (p. 22)

Despite the importance of apprenticeship training to the province, his findings lead to the conclusion that apprenticeship training and related careers receive limited recognition as an occupational path worth researching or pursuing.

To collect data for his study, Rainsforth relied heavily on bibliographic investigations supplemented by interviews with persons involved with the Alberta

Apprenticeship System. The study resulted in a chronological record on the development of apprenticeship in Alberta. The researcher recommends that his study be replicated every decade to allow for a continuous record as the apprenticeship system is constantly evolving due to the changing dynamics of society.

Ramsay (1974) is a study describing the apprentices in Alberta who withdrew from training in the trade areas of carpenter, construction electrician, and motor mechanic during the years 1968, 1969, and 1970. In order to obtain the required data, an information questionnaire was designed and sent out to the sample. This questionnaire was the main instrument of data collection.

The 4th sub-problem has the greatest relevance to this study as it determines the reasons why apprentices decided to enter an apprenticeship program. Two main reasons were identified for entering apprenticeship:

- dissatisfaction with employment opportunities for unskilled workers
- belief that journeyman status would result in higher earnings

Three predominant reasons were identified for withdrawing from the program:

- inability to secure steady employment during apprenticeship
- inability to earn a decent living as an apprentice
- received better employment outside of apprenticeship

The study determined that the majority of cancelled apprentices were not high school graduates.

The study recommends additional research as to the structure and content of the on-the-job training portion of apprenticeship training, the quality of guidance and

counseling available to apprentices, and solutions to the financial problems facing apprentices.

Nielsen (1973) examined two problems related to apprenticeship training:

1. What criteria governed the placement of high school vocational educational students when articulating with the apprenticeship program?
2. What were the achievement levels of these students as compared to apprentices without prior vocational training?

The study was restricted to the motor mechanics trade, and was conducted over a one-year period. The research design followed the characteristics of descriptive survey studies in order to secure evidence concerning an existing condition. From this, a comparison of present conditions can be made for future planning.

The study determined that apprentices with previous high school vocational training generally had a lower level of achievement than apprentices with no high school vocational training. It was also determined that significant inconsistencies exist in the Apprenticeship Board's criteria for issuing advanced credits for achievement in high school vocational programs.

The study recommends a number of research questions that are required to more fully understand the transition from high school to apprenticeship training. These include: inconsistencies in granting of advanced credits, nature of the placement process, and an extensive study of curriculum, evaluation procedures, and vocational guidance procedures in Alberta high schools.

Broad (1972) developed a systems model for apprenticeship training that is job-centered to ensure the apprentice is trained for the skills required by the job. The model consists of both on-the-job and off-the-job training components. He concluded there is a need to change the way apprenticeship is functioning, as the current system is inflexible and out-of-date. He also states that apprenticeship training has received insufficient attention throughout North America, and that many other aspects need to be studied.

In order to complete the study, letters were sent out provincially, nationally, and internationally requesting information on apprenticeship training models and structures. From the information gathered, a model of apprenticeship training was developed that relies on behavior objectives that relate directly to the current demands and skill requirements of the occupation.

Broad recommends that further study focus on methods of assessment of apprenticeship training, performance oriented training vs. the traditional methods of on-the-job training, the benefits of subsidized manpower training programs, and the role apprenticeship training can play in the manpower development of native and Metis people in Alberta.

Summary

Once a young person has met the criteria and graduated from high school, the task of making a career decision and proceeding with the steps required to achieve that career goal can be confusing, challenging, stressful and rewarding. Our attitudes play a major role in assisting and focusing the decision making process, and guiding our behaviors. It

is important to identify and examine these attitudes when making career decisions so that all potential careers are considered.

Chapter 3 – Research Methodology

Introduction

This chapter describes the methodology applied to provide the data required by the research study. Two collection methods were utilized, focus group interviews, and questionnaires. These sessions were conducted in five high schools in Northern Lights School Division #69, located in northeastern Alberta. The five schools were: Bonnyville Centralized High School, Bonnyville, AB., Ecole Plamondon School, Plamondon, AB., Glendon School, Glendon, AB., Grand Centre High School, Cold Lake, AB., and J. A. Williams High School, Lac La Biche, AB. Only those grade 12 students expected to graduate in June 1998 or June 1999 with an Alberta High School Diploma were included in the study.

Definition of Terms

Focus Group Interview - "a carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment" (Kreuger, 1988, cited in Lewis, 1997, p. 2).

Questionnaire - "a document that asks the same questions of all individuals in the sample" (Gall, Borg, & Gall, 1996, p. 289).

Likert Attitude Scale - a questionnaire consisting of attitude statements that are "single sentences that express a point of view, a preference, a judgment, an emotional feeling, or a position against something" (Postlethwaite, 1997, p. 2). These attitude statements require a response scale that ranges from strongly agree to strongly disagree. The

respondent's task is to "select some basis for deciding the degree of agreement, and finally to decide and indicate that degree of agreement" (Eley & Steacher, 1997, p. 1).

Systematic Random Sample - "One draws it by listing all the individuals in the population alphabetically, chronologically, by location, or according to some other unitary principle, and then drawing every fifth, tenth or thousandth name" (Caplow, 1971, p. 72).

Stratified Random Sample - "The investigator first divides into strata on the basis of some known characteristic and takes a random sample of each stratum separately" (Caplow, 1971, p. 72).

Validity -"Validity attempts to determine whether a test measures what it says it measures" (Moore, 1983, p. 197).

Reliability - "The reliability of a test refers to its consistency. Regardless of what concept a test purports to measure, does the test measure it consistently" (Moore, 1983, P. 197).

Ethical Considerations

In order to comply with the ethical guidelines established by the University of Alberta, and in particular the Department of Educational Policy Studies, the Research Ethics Review Application – Graduate Student Form was completed and submitted for review and approval. **(See Appendix H)** Ethical considerations for the school division, the cooperating schools, and the student participants were included in the invitations to participate in the study **(See Appendixes D & F)** and the letters of consent and agreement to participate in the study **(See Appendixes E & G)**.

Sample Jurisdictional Profile

Northern Lights School Division #69 was formed in 1995 with the amalgamation of Lakeland Public School District #5460 and Lac La Biche School Division #51. This amalgamation was the result of the Alberta Government's restructuring of the province's education system, reducing the number of school divisions from 140 to 60. The division has 25 schools dispersed over an area of 5714 square kilometers in Northeastern Alberta.

The information in Table 3 comes from the 1996 and 1998 Jurisdictional Profile Reports produced and distributed by Educational Information Services, Alberta Learning (formerly Alberta Education). The data indicates that the jurisdiction has a younger population, a lower family income, and a lower rate of educational attainment as compared to the province as a whole.

Table 3

Selected Statistics Jurisdiction and Province (1996/98)

Statistic	Jurisdiction	Province
Population (1991 Census)	35,200	2,545,555
% Population Aged 5-19 Years	26.0%	22.4%
% with at Least a Secondary School Certificate	59.1%	64.1%
Average Annual Family Income	$47,056	$52,346
ECS, Grade 1-12 Student Population	6,938	574,666
% Graduates Requiring > 3 Years to Complete High School	10.8%	20.5%
% Graduates Who Met Minimum University Entrance requirements	38.6%	44.7%

Table 4 indicates that the population of the jurisdiction has significantly lower levels of schooling except for trade certification. This may suggest that high school students in the jurisdiction might have a greater knowledge of, and appreciation for apprenticeship careers as compared to their provincial colleagues.

Table 4

Highest Level of Schooling [a] Jurisdiction and Province 1991 Census

Level of Schooling	Jurisdiction	Province
University with Degree	6%	13%
University without Degree	6%	10%
Trades Certificate & Non-University	34%	29%
Secondary School Certificate [b]	14%	13%
Less than Secondary School Certificate [c]	28%	27%
Less than Grade 9[c]	12%	8%

Notes. [a] The highest level of schooling is the last grade or year of elementary or secondary school attended, or the highest year of university or other.

[b] A secondary school certificate is comparable to a high school certificate or diploma.

[c] Includes students who are still in the secondary school system.

Table 5 indicates that a lower percentage of the youth attend school and that their unemployment rate is higher than the provincial average.

Table 5

Labour Force Activity and School Attendance Ages 15-19

Status	Jurisdiction	Province
Attending School/Employed	30%	34%
Not Attending School/Employed	10%	13%
Attending School/Not Employed	48%	45%
Not Attending School/Not Employed	12%	8%

The information contained in Table 6 is from the Apprenticeship and Industry Training 1998/99 Annual Report. Northern Lights School Division is in the Bonnyville Career and Development (CDC) area, and this jurisdiction has approximately 2% of the province's apprenticeship registrations.

Table 6

Apprenticeship Participation 1998

Area	Total Registrations	New Apprentices	Apprentice Graduates	Training Attendance
Bonnyville CDC	794	225	100	420
Provincial Total	30,555	10,680	4,321	14,675

Table 7 shows the student populations of the participating schools for the 1997/98 school year.

Table 7

Participating Schools Student Populations 1997/1998

School	Population
Bonnyville Centralized	510
Ecole Plamondon	439
Glendon	257
Grand Centre	612
J. A. Williams	495

Sample Selection

A letter outlining this research study was sent to the division's Superintendent of Schools and each of the High School Principals requesting their cooperation and permission to proceed in February and March of 1998. **(See Appendix D)** A letter of consent granting permission to proceed with the study was received from all parties. **(See Appendix E)**

In order to comply with the legislation of the Freedom of Information Privacy and Protection Act (FOIPP) of the Province of Alberta, the participating schools were unable to provide demographics of students under their jurisdiction to allow for direct initial contact by the researcher. To facilitate contact with their students, each school forwarded a package prepared by the researcher containing a Letter of Invitation to Participate in the Study **(See Appendix F)**, and a Letter of Agreement to Participate in the Study **(See Appendix G)**, to each perspective participant. A total of 410 invitations

were sent to grade 12 students expected to graduate with an Alberta High School Diploma **(See Appendix B)** in their current school year. Ten invitations were sent to students at J. A. Williams High School in May 1998 to facilitate the pilot interview session in June 1998. The remaining 400 (the total number of grade 12 students in all five schools as of January 4, 1999) were sent in the first week of January 1999 to facilitate the main interview sessions in February 1999 and the questionnaire sessions in May 1999. Table 8 indicates the number of invitations sent through each school.

Table 8

Student Invitation Data

School	No. of Invitations
Bonnyville Centralized	100
Ecole Plamondon	27
Glendon	16
Grand Centre	171
J. A. Williams	96

There was a poor response to the invitations, and due to FOIPP, the researcher was unable to perform follow-up contacts to non-responding students or determine how many invitations were initially sent to each gender. Five invitations were returned by Canada Post as undeliverable. The Letters of Agreement to Participate in the Study were filed separately by school location and numbered according to the order that they were received.

As a result of the poor response, the decision was made to attempt to involve all of the students agreeing to participate in either an interview or questionnaire session. This was to improve the reliability and validity of the study due to the low number of participants. When the data collection was complete, 70 students (26 females and 44 males) participated in the study.

Focus Group Interviews

The interview sessions were used to provide qualitative data for the research question, and to provide as much information as possible about career decision-making attitudes for incorporation into the questionnaire. The decision was made to interview one quarter of the sample and administer the questionnaire to the remaining three-quarters. It was felt that administering the questionnaire to the majority of participants would yield data of increased validity and reliability as the attitude statements in the questionnaire would be direct and to the point, and relate directly to the research question.

Lewis (1997) recommends the use of focus group interviews for a number of reasons:

- small groups allow for genuine discussion among the members
- when interviewing young people, having company often increases the rate and quality of responses to the questions
- it is better to discuss some topics with a small group of people who know each other

Schermerhorn, Hunt & Osborn (1991) recommend that the optimal size for focus group interviews is five to seven participants, and that the group not be completely homogenous. They suggest that groups with more than seven members result in fewer opportunities to participate, more member inhibitions, domination by aggressive members, and a tendency to split into subgroups. Groups of less than five members result in fewer people to share task responsibilities, more personal discussions, and more complete participation.

The interview process involved four sessions: a pilot interview at J. A. Williams High School in June 1998, and main interview sessions in February 1999 at J. A. Williams High School, Bonnyville Centralized High School, and Grande Centre High School. **(See Table 9)** Due to the low response rate from Glendon School (four students) and Ecole Plamondon School (six students), a decision was made not to conduct interviews at those locations, but to include them in the questionnaire sessions.

Table 9

Interview Session Participation

School	Female	Male
J. A. Williams [a]	2	2
J. A. Williams [b]	2	3
Bonnyville Centralized [b]	2	3
Grand Centre [b]	4	2

Notes. [a] Pilot Interview Session.

[b] Main Interview Session.

Pilot Interview Session

The pilot interview session was held at J. A. Williams High School in Lac La Biche, on June 11, 1998, with two female and two male students participating. **(See Table 9)** The interview session took place during lunch break, and was approximately 25 minutes long. The pilot interview session was held for the following reasons:

- provide the researcher with interview experience
- have an open dialogue with the students on the topic of the research
- examine the data obtained to evaluate the questions
- examine the interview format and structure

Pilot interview procedure and questions.

1. The interview began with the researcher introducing himself and describing the nature of the research study.
2. The participants were reminded that their participation was voluntary, their comments would remain anonymous, and that they were free to withdraw from the interview at anytime.
3. The participants were asked to provide their age and academic stream.
4. The following questions were asked in the interview:
   - What would careers have to offer before you would consider them as possible vocations?
   - What would eliminate careers as possible vocations for you?

- How aware are you in regards to careers available through apprenticeship training?
- Why would you choose to pursue an apprenticeship career as a first choice vocation?
- Why would you reject an apprenticeship career as a first choice vocation?

Pilot interview analysis.

As previously stated, the pilot interview session had three purposes:

- provide the researcher with interview experience
- test the questions for the main interview sessions
- collect relevant information for the research question

A number of valuable lessons were learned during this process that were incorporated into the main interview sessions:

1. During the pilot interview, the students sat in regular student desks and were not equidistant from the microphone. This resulted in some reproduction difficulties in the tape recording. One student in particular was soft spoken and her comments were at times difficult to hear, understand and transcribe. For the main interviews, the tables and chairs were arranged so all participants were approximately the same distance from, and spoke directly to the microphone.
2. At times during the interview, more than one student was speaking at the same time. This began to occur as the students lost some of their initial shyness and got more actively involved in the interview process. This was positive in terms of providing information, however it made transcription difficult if not impossible at some points.

For the main interviews, the researcher stressed the need to have only one person speak at a time, and that everyone would get their turn. Intervention occurred as required to facilitate this.

3. The researcher prepared a script to follow during the main interview sessions, to ensure that all the information was given, and the interview questions were asked in exactly the same way at each session. This was necessary to increase the reliability of the measurement tool. In addition, to save time each participant filled out a short form to provide the required demographic information. **(See Appendix I)**
4. The time required to transcribe the pilot interview tape convinced the researcher to employ a machine transcription professional for the main interviews.
5. The interview questions appeared to stimulate the students thinking about careers and their career decision making, and provided useful and relevant information for the study. However, the questions were reworded for the main sessions to provide a clearer understanding of what type of information was requested, and to more closely align the questions with the research question and related sub-questions.

Main Interview Sessions

The main interview sessions were held at J. A. Williams High School on February 19, 1999, and Bonnyville Centralized High School and Grand Centre High School on February 26, 1999. **(See Table 9)** For these sessions, a systematic and stratified random sample of six students (three of each gender), was compiled using the following procedure:

1. Students were separated into female and male groups for each school.

2. Students were contacted by telephone one week before the interview in the order their participation letters were received, until three of each gender committed to attend the session on the scheduled date. Interview dates for each school were previously arranged with the principals of the cooperating schools. The decision was made to contact each student a week prior to the scheduled date as it was felt it would be easier to obtain a commitment on shorter notice.
3. Each participant was contacted a second time by telephone the evening before their interview session to remind them of their appointment.

To facilitate and encourage participation, the interviews were scheduled on regular school days, and at the request of the principals, lasted no more than 30 minutes. The preference was not to interfere too severely on regular class time. A tape recorder was used to record the interviews, and a professional secretary was employed to produce machine transcriptions of the discussions.

Two students failed to arrive for their interview session, and there was one case of mistaken gender. One participant was believed to be male when in fact she was female. The student was unaware of the error, and in the interest of not wishing to embarrass anyone, was not made aware of the error by the researcher.

Main interview procedure and questions.

- The interviews began with the researcher introducing himself and describing the nature of the research study.

- The participants were reminded that their participation was voluntary, their comments would remain anonymous, and that they were free to withdraw from the interview at anytime.
- The participants were asked to complete an information sheet providing their gender, age, academic stream (10 –20 – 30 or 13 – 23 – 33), and what their plans were after graduation. (Attend university, Attend college, Attend technical school, Enter into apprenticeship, Enter the workforce, or Other) **(See Appendix I)**

Based upon the pilot interview analysis, the interview questions were reworded as follows:

- What attitudes influence your decision to choose a particular career as a first choice vocation after graduation? Vocation means a specific career path rather than simply a job.
- What attitudes influence your decision to eliminate certain careers as possible vocations after graduation?
- How familiar are you about the careers available through the apprenticeship system and apprenticeship training in general?
- If you were so inclined, why would you choose to pursue an apprenticeship career as a first choice vocation after graduation?
- If you were so inclined, why would you reject an apprenticeship career as a first choice vocation after graduation?

Main interview analysis.

The tape-recorded transcripts of the interview sessions were machine transcribed by a professional secretary who provided both hard and electronic copies. Student comments were analyzed and form the database for the qualitative analysis. This database was also utilized in the construction of the focus group questionnaire, which was administered to the remaining students who agreed to participate in the study.

Focus Group Questionnaire

The data collected during the interview process was used to produce an attitude scale questionnaire **(See Appendix J)** which was administered to second sample populations at the same five high schools. Sample selection followed the same process as the focus group interviews. Again to encourage participation, the questionnaires were administered in a supervised environment to groups of 4 - 18 students on a regular school day. A total of 50 students completed the questionnaire. Participation by each school is shown in Table 10.

Table 10

Questionnaire Session Participation

School	Female	Male
Bonnyville Centralized	4	7
Ecole Plamondon	3	3
Glendon	3	1
Grand Centre	3	8
J. A. Williams	3	15

> According to Crites (1973), the attitude scale assesses a person's dispositions toward making career choices and entering the work force. It measures the affective component of career maturity, namely, a person's feelings and subjective reactions about her or his career development. (Luzzo, 1993, p. 196)
>
> One question form frequently used in student questionnaires is the Likert (Likert, 1932), which typically comprises a statement such as "You have learned something that you consider valuable" together with a response scale that ranges from Strongly agree to Strongly disagree. The student's task is presumably to think back over the teaching, to select some basis for deciding the degree of agreement, and finally to decide and indicate that degree of agreement. Likert agree/disagree questions were initially devised for attitude surveying (Likert, 1932; Anastasi, 1982), in which the responses are used to indicate the respondents' attitudes and values (Torgerson, 1958). (Eley & Stecher, 1997, p. 1)

Roberts, Laughlin and Wedell (1997) suggest that the Thurstone approach to attitude measurement may be superior to the Likert approach under certain circumstances.

> ...the Likert procedure may falter for individuals who hold extreme attitudinal positions [sic] the Thurstone procedure does not suffer from the degraded validity exhibited with the Likert method when

individuals with extreme attitudes are measured. (p. 19)

Their study involved 200 subjects with abortion as the attitude measurement topic. They support the use of the Likert approach in less controversial and emotional subjects.

Questionnaire Format

The questionnaire began with a section requesting the same demographic information gathered during the interviews: gender, age, and academic stream, and plans after graduation. The main body consisted of 52 attitude and knowledge statements with a Likert Response Scale. **(See Appendix J)** Eley and Stecher (1997) state that Likert scale questionnaires "... require the generation of single stem statements, combined with a relatively simply presented scale common across questions." (p. 2) The statements were based upon an analysis of the information collected during the interview process. Initially, a total of 73 attitude statements were compiled from the student comments, and this list of statements was forwarded to a validation committee of three members for their review and comments. The committee members were: Dave Collett Ph.D., Professor, Department of Educational Policy Studies, University of Alberta, Edmonton, Alberta, Nancy Parker Ph.D., Coordinator, Department of Research and Development, Portage College, Lac La Biche, Alberta, and Brent Foster M.Ed., Director, Department of Students Services, NorQuest College, Edmonton, Alberta. From their comments and suggestions, the number of statements was reduced from the original 73 to 52. The questionnaire was also shown to four Grade 12 students from J. A. Williams High School for their comments and suggestions.

Questionnaire Procedure

The questionnaires were administered according to the following procedure at each school:

1. The students met with the researcher in the school library at a designated time.
2. Each student was issued a questionnaire package, and reminded that their participation was voluntary, anonymous, and greatly appreciated.
3. Each student completed his/her questionnaire and returned it to the researcher. The majority of participants completed their questionnaires in 10 – 15 minutes.

Data Analysis

Qualitative Analysis

Analysis of the interview data began with comparing the transcripts to the interview tapes to check for accuracy and make any corrections. Each of the transcripts was then analyzed according to each of the themes identified by the research sub-questions. The data was reduced to a manageable level by selecting, simplifying, and summarizing the related data. The amount of data obtained from the interview sessions was sufficiently manageable as to not require the use of computer analysis.

Quantitative Analysis

For the quantitative analysis of this study, the software package, Statistical Package for the Social Sciences (SPSS) Base 9.0 for Windows was utilized as the primary analysis tool for the student personal information data provided during the interview and questionnaire sessions, and the attitude statement data from the questionnaires. The process of inputting the data into SPSS began by naming the 56

variables according to the parameters established by the program. Each variable name can have a maximum of eight characters, and were identified as follows:

Gender – gender

Age – age

Academic Stream – acastrm

Plan After Graduation – plangrad

Attitude Statements – quest#1 – quest#52

Each variable was given a label. The first four variables were labeled according to the information requested (e.g. acastrm – Academic Stream). The remaining 52 variables were labeled with their respective attitude statements (e.g. quest#1 – My career must be interesting.). The responses requested for each label were given the following numeric values:

Gender: Female - 1, Male - 2

Age: 16 - 1, 17 - 2, 18 - 3, 19 - 4

Academic Stream: 13-23-33 - 1, 10-20-30 - 2

Plans after Graduation: Attend University - 1, Attend College - 2, Attend Technical School - 3, Enter Apprenticeship - 4, Enter Workforce - 5, Other - 6

Likert Scale for the attitude statements: Strongly Agree - 1, Agree - 2, Don't Know - 3, Disagree - 4, Strongly Disagree - 5

The responses were entered into SPSS using the numeric values. Each personal information sheet and questionnaire was numbered according to the order it was entered into the program to allow for rechecking the data input to ensure no mistakes were made.

Summary

The focus group interviews and questionnaires were designed to identify the current attitudes that influence high school graduates decisions with regard to career choices, and in particular apprenticeship careers. A total of 70 Grade 12 students from five high schools were involved in the data collection process. The methodology was mainly qualitative in nature, but the interviews and questionnaires allowed for additional quantitative statistical analysis using the program SPSS, Statistical Package for the Social Sciences.

Chapter 4 – Presentation of the Data

Introduction

Norusis (1997) defines data analysis as:

> ... the art of examining, summarizing, and drawing conclusions from data. [sic] Data analysis is much more then knowing what some exotic terms and statistical formulas mean. Good data analysis involves a mixture of common sense, technical expertise, and curiosity. It's knowing what questions to ask and how best to answer them. Analyzing data isn't a rote activity - every data set you encounter is in some way unique. (p. 1)

The analysis of the data obtained for this study consists of qualitative and quantitative components. The analysis of the interview data is qualitative in nature, playing a "discovery role", while the questionnaire data is quantitative in nature, playing a "confirmatory role" (Gall et al., 1996, p. 29).

Definition of Terms

Analytic Induction – "Analytic induction means that the researcher searches through the data bit by bit and then infers that certain events or statements are instances of the same underlying theme or pattern" (Gall et al., 1996, p. 25).

Qualitative Research – Qualitative "researchers develop knowledge by collecting primarily verbal data through intensive study of cases and subjecting these data to analytic induction" (Gall et al., 1996, p. 28).

Quantitative Research – Quantitative "researchers develop knowledge by collecting numerical data on observable behaviors of samples and then subjecting these data to numerical analysis" (Gall et al., 1996, p. 28).

Sample Selection Data

The invitations to participate in the study yielded a poor response (20.2%) from the Grade 12 student populations of the participating schools. Of the 410 invitations sent only 83 replies were received, with 36 females and 47 males agreeing to participate in the study. Due to FOIPP restrictions, the number of invitations sent to individual female and male students is unknown. **(See Table 11)** Of the replies received, only 70 students actually participated. **(See Tables 9 & 10)**

Table 11

Agreement to Participate Data

School	No. of Invitations	Males Agreeing to Participate	Females Agreeing to Participate
Bonnyville Centralized	100	10	14
Ecole Plamondon	27	3	3
Glendon	16	1	3
Grand Centre	171	13	9
J. A. Williams	96	20	7

One explanation for the poor response rate may be one of the study assumptions which suggests that the majority of high school students have little or no awareness about the careers offered through apprenticeship training, and therefore would not be interested. A second reason may be that high school students are not interested in

participating in research. In 1995, Alberta Advanced Education and Career Development commissioned a research study to survey high school students on their perceptions of work and further education. They hired eight high school students to administer the survey by meeting with other high school students in shopping malls, parks, bus stops, summer festivals, etc.

> Most (but not all) of the surveyors complained about how difficult it was to find candidates for the survey. [sic] While some of the students had no difficulty in meeting or exceeding the 8 interview per day quota, other students found this an impossible goal to reach. Reasons for the lack of success were attributed to the lack of students in the geographic area assigned, and high refusal rates (candidates refusing to take the interview). (Alberta Advanced Education, 1995, p. 6)

Qualitative Analysis

Qualitative data analysis is more inductive than deductive, relying heavily on narrative and explanation rather than on testing or numerical data. Specific examples of comments from the interview sample **(See Table 9)** and observational statements of the researcher are presented under headings that coincide with the research sub-questions. The research question and sub-questions are restated here for clarity.

Research question: What attitudes are identified by new high school graduates that influence their career decision making, and in particular to pursue or reject apprenticeship careers as first choice vocations?

Research Sub-questions:

1. What attitudes influence new high school graduates choice of career?

2. What awareness do new high school graduates have with regard to apprenticeship career opportunities and apprenticeship training in general?
3. What attitudes influence new high school graduates to pursue apprenticeship careers as first choice vocations?
4. What attitudes influence new high school graduates to reject apprenticeship careers as first choice vocations?

To facilitate data analysis and reporting, the four sub-questions have been simplified as follows: 1) attitudes influencing career choice in general, 2) awareness of apprenticeship careers and training, 3) positive attitudes towards apprenticeship careers, and 3) negative attitudes towards apprenticeship careers.

Sub-question #1 - Attitudes Influencing Career Choice in General

This question elicited the greatest response from the interview sample, with the students appearing to be fairly comfortable in making their comments. The data identified 28 positive and 19 negative attitudes that influence the new high school graduates choice of career. A few of the attitudes are identified as having both positive and negative influences. Many of these attitudes are consistent with the Powell and Bloom (1962) study on the vocational plans of adolescents, and the Cook and Alexander (1979) study on in school career development and its consequences for youth work experience in the first few years after high school graduation.

The positive attitudes identified are: interesting, exciting, fun, standard of living, worth the effort, like what doing, happy, money, parental footsteps, family influence, friend influence, hours of work, enjoyment, working with people, working alone, inside environment, outside environment, diversity, working with technology, going to school,

opportunity for advancement, need for change, employment opportunities, stimulating, future benefits, challenging, motivating and aptitude. Negative attitudes identified are: need for a second language, amount of schooling reguired, amount of money required, availability of employment, qualifications required, working environment, working or not working with other people, waste of time, lack of interest, boring, desk job, time required for training, physical labour, requires far too little thinking, hours of work, aptitude, amount of responsibility, and other peoples experiences. The following comments were made during the interview sessions:

"I have to be doing something I already have or am interested in."

"Exciting, and it would have to be fun."

"It doesn't matter if you make a lot of money in a job. If you don't like what you're doing, it's not worth it. You have to be happy with what you're doing."

"Mostly others that I heard it's a pretty good career to go into."

"I like working with people."

"Probably the money, and the people I'm working with."

"Do something that I'd like to do, but also take options that could help me benefit in the future."

"Very basically something I'd like to do with my life."

"It has to be interesting, and I think that the jobs that my parents and brothers have influence my ideas and thoughts as well."

"I want something interesting that I'll be motivated to do all the time."

"Maybe the surroundings and stuff. Like the atmosphere at work. Like the amount of people you're with."

"Labour job. I don't know. I wouldn't do a labour job."

"I wouldn't want to have a job that has a lot of responsibility."

"I don't want to be stuck in an office all my life."

"I really don't like dealing with other people. I don't like having to work in teams with them. I like to work out by myself."

"I'm not going to devote ten years of my life to school."

"How they weigh the qualifications to get in, like the marks. Marks are everything now."

"I'm not prepared to take two years of school just to be a doctor, or get my bachelor of commerce or anything like that."

I can't afford to go the length of time a doctor would go."

"Some of them require too little thinking."

The most predominant attitudes that influence initial career choice appear to be interest, money, and the amount of schooling required in terms of entrance requirements, cost, and time. The type and quality of the comments suggest that new high school graduates have devoted little research or time into their career decisions. This is consistent with the Cook and Alexander (1979) and Kotrlik and Harrison (1986) studies.

Sub-question #2 – Awareness of Apprenticeship Careers and Training

The interview data for this theme strongly supports the studies second assumption that new high school graduates have little or no knowledge, awareness, or interest in the career opportunities available through apprenticeship training. Of the 20 students interviewed, 13 attempted to comment on this question, but none was able to describe how the apprenticeship training system works, or list and describe the variety of careers available. There was the odd fragment of accurate information, but generally the

comments indicate a general lack of knowledge and understanding of apprenticeship training. In fact, some of the comments indicate a lack of knowledge and understanding of the education and training required for some of the more predominant career aspirations of today's youth (e.g. doctor and lawyer). This again is consistent with Cook and Alexander (1979) who state that less than 2/3 of high school seniors could provide sufficient and accurate details about their chosen career paths. The following comments were made during the interview sessions:

"I'm pretty familiar with a lot of apprenticeship or apprenticing careers or whatever."

"It means to me, it means learning as you're working. It's like going to school at the same time you work. Like getting your school at the same time you're working."

"I think the apprenticeship system is pretty good, because you're doing stuff as like (Male) said you're learning as you're doing something. You're eventually gaining more knowledge over time, and you're also when you're finished school and you might be or almost guaranteed a job after. You know if you're good and people know you're good at it. It's basically going to school and working at the same time, and getting paid for it."

"All I know about apprenticeship is what my Dad tells me about his students. I can't comment. I know that training is apprenticeship. That's about it, and I know you work with someone and you learn, it's like a practicum and you get paid. Something like that."

"But, it's mostly like, I don't know what else is available, but it seems to me it's dealing with mechanics and welding. It's a lot of hands on, but not like doctors and lawyers."

"It's harder to be an apprentice for a doctor. You have to go to school for all those years and learn all that. Like with mechanics and stuff, it's really good for that."

"It's not available in some fields."

"I know there's always going to be a need for trades people, and the trade that I chose, I was talking to a couple of people in that field and they said it's high demand."

"I can work for so long, go to school for a couple months, go to work, and then just three periods and then I'm finished. And then if I want to I can go again and I can get my journeymen's, like I'm allowed to teach the next set of people that come in."

"I don't know a lot about it, but my boyfriend is doing one right now, and he's apprenticing to be an electrician, and he always talks about it. He really likes it, and I know other few people that really like it. That's the only reason why I know is through people my friends and everything."

"There's lots of careers available. There's stuff in the oil patch. There's places just here in town like law firms and stuff, and the thing I like about apprenticeship, you can take it and figure if you like that line of work or not, and you're not putting a whole life's plans on at stake by taking it because it's more or less experimentation."

It is not difficult to conclude from their comments, that the new high school graduates interviewed in this study have little knowledge or understanding of apprenticeship training and related career opportunities. As the interview sample can be classified as a representative sample of the typical new high school graduate in Alberta, it is also safe to assume that this would be a consistent finding across the province.

Sub-question #3 – Positive Attitudes toward Apprenticeship Careers

The data collected for this theme is consistent with the lack of awareness finding of sub-question #2. Because of their minimal knowledge of apprenticeship training, the students were able to identify and articulate few positive attitudes towards apprenticeship careers as vocations. The following comments were made during the interview sessions:

"Job experience. Because as you work with them usually you have to apprentice for pretty well you got a job with the journeyman that you're apprenticing under. You have a job after school."

"Learning more about the job when you're working with someone."

"It's not textbook. You're not writing it, you're doing it. You're not sitting there writing about the one who's done it, you're the one who's doing it, and when you're done, you're not as lost as when you are just out of college. That's about it."

"I don't like learning from a book. You get out there and find out what to expect."

"You're pretty much guaranteed a job after. You're working for somebody for two years, and they're really good, they're going to for sure hire you. So it's not like going to university and then you go out and find yourself a job."

"It's more personal attention. Really good one on one."

"It seems that apprenticeship careers are mostly blue collar jobs, and you get work other than desk jobs, and that you can make just as much money as desk jobs do. Like welders, they make lots of money."

"Trades make it easier to have your own business, and being your own boss is attractive to me."

"You can have bad marks and still get into it."

Sub-question #4 – Negative Attitudes toward Apprenticeship Careers

The data obtained for this sub-question is consistent with sub-questions 2 and 3. Lack of awareness of apprenticeship careers limited the number of comments. The following comments were made during the interviews:

"Lack of interest."

"Yeah, lack of interest in that area, cause most of it is mechanics and engines, and you have to be into stuff like that."

"You don't want to do it is one reason."

"I'm not interested."

"It's pretty much because of my family, but they really want me to go to university, and with apprenticeship you don't have to. Right after high school, you can just go. I want something that I'll learn and I know I can have a job once and I get a lot out of it. That's what I want. I really want a career, I don't consider apprenticeship a real career. It's just kind of a trade, most of them are trades and I want a real career."

"The person might choose to go to college or university instead of apprenticeship cause he can get his education and come out of the college with his certificates and all that and just go directly into a job instead of and that could take two to six years instead of taking three to ten years of working his way up through apprenticeship."

"Because of the money."

In conclusion, the interview data provided insights into new high school graduates attitudes towards initial career choice that is consistent with previous studies. The data also supported one of the studies main assumptions, that new high school graduates have little knowledge or awareness about the careers available through apprenticeship training or how apprenticeship training works.

Quantitative Analysis

Norusis (1997) describes statistical analysis as having three main components:

1. Data description - "... displaying and summarizing the data values" (p. 2).

2. Hypothesis testing - "... drawing conclusions about much larger groups of people or things than for those which you have data. [sic] You don't want to restrict your conclusions to those who participated in your survey" (p. 3).
3. Examine relationships - "... study and model the relationships between variables" (p. 3).

Personal Information Analysis

As was previously reported, 26 (37.1%) of the participants were female, and 44 (62.9%) were male. They ranged in age from 17 to 19, with the majority, 38 (54.3%) being 17. Thirty-seven (52.4%) were in the 13-23-33 academic stream, and 33 (47.1%) were in the 10-20-30 academic stream. The 13-23-33 academic stream is the general diploma track that provides graduates with the entrance requirements for most college and technical school programs, and the majority of apprenticeship careers. Some college, technical school, and apprenticeship programs require prerequisite courses from the 10-20-30 stream. The 10-20-30 academic stream provides graduates with the entrance requirements for all college, technical school, apprenticeship and university programs. Entrance into post-secondary programs is usually dependent upon individual student achievement, and this is often a limiting factor in making career choices.

Table 12 provides the results of the gender/plans after graduation crosstabulations. Thirty-three (75%) of male respondents were planning on some type of post – secondary education compared to 19 (73%) of females. Post–secondary education includes university, college, technical school, and apprenticeship. Consistent with previous studies, Walsh (1989), and Alberta Advanced Education and Career

Development (1995), only 7 (10%) of respondents were considering an apprenticeship career and all of those were male.

Table 12

Gender/Plans after Graduation Crosstabulations

Plans After Graduation	Female	Male
University	7	7
College	11	15
Technical School	1	4
Apprenticeship	0	7
Workforce	4	7
Other	3	4
Total	26	44

Table 13 provides the results of the academic stream/plans after graduation crosstabulations. Plans to enter university or college are consistent with the entrance requirements provided by the respective academic streams. Within the 10-20-30 stream, 12 (36.4%) of graduates plan to attend university and 11 (24.2%) college, while in the 13-23-33 stream, only 2(5.4%) plan on university and 15 (48.6%) college. This is consistent with Hecht & Traub (1974) who concluded that the majority of high school students were preoccupied with going on to college, and Herr & Cramer (1979), and Mandevu (1989) who conclude that a higher value is placed on academic careers as compared to technical/vocational careers. There is a fairly even distribution from both streams across the remainder of the options. There is one surprising result however, 4 (12.1%) students

from the 10-20-30 stream stated they plan on entering into apprenticeship. Since this stream is the more *academic* program, it is interesting that these students are choosing a more *vocational* career path. This is inconsistent with the findings of Mandevu (1989), Kotrlik and Harrison (1986), and Herr and Cramer (1979) who concluded that high school graduates place a higher value on academic careers as compared to technical/vocational careers.

Table 13

Academic Stream/Plans after Graduation Crosstabulations

Plans After Graduation	10-20-30	13-23-33
University	12	2
College	8	18
Technical School	2	3
Apprenticeship	4	3
Workforce	5	6
Other	2	5
Total	33	37

Questionnaire Analysis

To facilitate the analysis of the attitude statements from the questionnaire **(See Appendix J)**, and remain consistent with the qualitative analysis, the statements are categorized according to the four research sub-questions. Statements 1 – 21 relate to sub-question #1 **(See Table 14)**, statements 22, 23, 27, 28. 30, 31, 32, 35, and 37 to sub-question #2 **(See Table 15)**, statements 24, 29, 33, 34, 36, 38 – 43, and 45 – 52 to sub-

question #3 **(See Table 18)**, and statements 25, 26, and 44 to sub-question #4 **(See Table 19)**.

Sub-question #1 – Attitudes Influencing Career Choice in General.

Attitude statements 1 – 21 of the questionnaire address the issue of attitudes influencing career choice in general. The data is consistent with the findings of Powell & Bloom (1962) and Cook & Alexander (1989) who found that interest, enjoyment, personal satisfaction, standard of living, prestige, advancement opportunities, employment opportunities, responsibility and security were the most significant motivating attitudes in choosing a career. From Table 14, it is also interesting to note that 30 (78%) of respondents either disagreed or strongly disagreed that approval of family and friends is an influence in choosing a career. This is consistent with the Powell and Bloom (1962) finding that adolescents state they are not influenced by anyone when making a career choice. Table 14 lists the shortened attitude statements reflecting each relevant attitude, and the corresponding student responses.

Table 14

Attitudes Influencing Career Choice

Attitude Statement #	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
			Students (n = 50)		
1. Interesting	37	13			
2. Exciting	24	23	3		
3. Satisfying	37	12	1		
4. Standard of Living	14	26	8	2	

5. Approval of Family & Friends	3	8	9	23	7
6. Prestige	3	21	16	9	1
7. Work with People	7	26	13	3	1
8. Work Outside	5	11	23	11	
9. Manual Labour	1	11	15	16	7
10. Diversified	5	33	11	1	
11. Latest Technologies	8	19	15	6	2
12. Further Education or Training	12	23	12	2	1
13. Advancement Opportunity	28	21	1		
14. Opportunity for Change	18	29	3		
15. Employment Opportunity	26	18	6		
16. Stimulating	24	24	2		
17. Challenging	16	29	4	1	
18. Motivating	19	30	1		
19. Critical Thinking	4	25	14	6	1
20. Responsibility	10	35	4	1	
21. Future Security	30	20			

Sub-question #2 – Awareness of Apprenticeship Careers and Training.

Attitude statements 22, 23, 27, 28, 30, 31, 32, 35, and 37 address the issue of awareness of apprenticeship careers and training. Table 15 data indicates that 32 (64%)

of the respondents believe they are familiar with the careers available through apprenticeship training, and 18 (34%) state they are not. In regards to what types of careers are available, 37 (74%) disagreed that apprenticeship careers are restricted to the construction and mechanical trades, and 9 (18%) indicated they didn't know. Thirty-four (68%) believe they understand how the apprenticeship training system works, but the statements related directly to apprenticeship training suggest otherwise. There is agreement that apprenticeship training is a combination of school and work, and that apprentices learn by hands on experience. However, 40 (80%) stated they didn't know or disagreed that apprentices are paid to attend school, and 25 (50%) indicated they didn't know or disagreed that apprenticeship programs take from two to four years to complete. Table 15 displays the questionnaire data for this sub-question.

Table 15

Awareness of Apprenticeship Careers & Training

Attitude Statement #	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
			Students (n = 50)		
22. Career Awareness	6	26	15	2	1
23. Training Awareness	6	28	12	4	
27. Const. & Mech. Trades		4	9	26	11
28. Hands-on Experience	10	34	3	2	1
30. School & Work Comb.	16	31	3		
31. Paid to Attend School	4	6	34	4	2
32. 2 – 4 Year Program	5	20	23	2	

35. One to One Instruction	1	31	12	5	1
37. Wages Increase	5	27	16	2	

Table 16 displays the results of the crosstabulations between the statements, I know about the careers available through apprenticeship training, and I know how apprenticeship training works. Twenty-eight (56%) of the respondents agree or strongly agree they are familiar with apprenticeship careers and how the apprenticeship training system functions. Twelve (24%) responded that they don't know about apprenticeship and the remaining 10 (20)% indicate some confusion with their responses.

Table 16

Apprenticeship Careers/Apprenticeship Training Crosstabulations

I know about the careers available through apprenticeship training	I know how apprenticeship training works			
	Strongly Agree	Agree	Don't Know	Disagree
	Students (n = 50)			
Strongly Agree	4	2		
Agree	1	21	4	
Don't Know	1	5	8	1
Disagree				2
Strongly Disagree				1

Table 17 displays the results of the crosstabulations between the statements, I know how apprenticeship training works, and apprenticeship training takes two to four years. Twenty-eight (56%) of students indicated they know how apprenticeship training

works and that programs ranges from two to four years in length. Six (12%) stated they didn't know how apprenticeship training worked, but showed some confusion by agreeing it takes from two to four years. Eight (16%) were consistent in their responses by indicating they were not familiar with apprenticeship training.

Table 17

Apprenticeship Training/Two - Four Year Crosstabulations

I know how apprenticeship training works.	Apprenticeship training takes 2 – 4 years.			
	Strongly Agree	Agree	Don't Know	Disagree
	Students (n = 50)			
Strongly Agree	4	2		
Agree	1	21	4	
Don't Know	1	5	8	2
Disagree				2

Additional crosstabulations between the attitude statements for this sub-question yielded results similar to Tables 16 and 17. Based upon this data, there is evidence to conclude that new high school graduates have some awareness and understanding about apprenticeship careers and training. However, this awareness and understanding is relatively weak and unlikely to have a strong positive influence in selecting an apprenticeship career as a first choice vocation.

Sub-question #3 – Positive Attitudes toward Apprenticeship Careers.

Statements 24, 29, 33, 34, 36, 38, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, and 52 relate to this sub-question. Twenty-six (52%) of respondents agree or strongly

agree that apprenticeship careers are professional careers, while 24 (48%) indicated they didn't know or disagree. Forty-eight (96%) believe valuable work experience is obtained, 32 (66%) believe that there are many career opportunities available, and 30 (60%) agree there are opportunities to cross train for different careers. Examining the attitudes of prestige, standard of living, challenge, interest, excitement, stimulation, motivation, personal satisfaction, responsibility, and future security, there is general agreement that apprenticeship careers offer all these things, but there is also doubt indicated by the frequency of the don't know and disagree responses. Twenty-seven (54%) agreed or strongly agreed they would be willing to pursue an apprenticeship careers, 11 (22%) don't know, and 12 (24%) state they would not.

Sub-question #3 data adds additional support to the sub-question #2 conclusion that student awareness and understanding of apprenticeship training is relatively weak. It also supports Matheson (1997) assertion on the "lack of awareness that these opportunities exist (p. 6). Table 18 displays all the results for this sub-question.

Table 18

Positive Attitudes toward Apprenticeship Careers

Attitude Statement #	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
			Students (n = 50)		
24. Professional Careers	8	18	16	7	1
29. Little Time in School		12	18	17	3
33. Guaranteed Employment	1	14	20	13	2

34. High Standard of Living	1	15	28	6	
36. Easy for Own Business	2	20	23	4	1
38. Valuable Work Experience	20	28	2		
39. Opportunity to Cross-train	4	26	15	4	1
40. Consider Pursuing Apprenticeship	8	19	11	11	1
41. Prestige	1	19	24	5	1
42. Many Career Opportunities	3	30	13	4	
43. Family Support	12	28	7	2	1
45. Challenging	5	35	7	3	
46. Interesting	11	26	10	2	1
47. Exciting	9	16	18	7	
48. Personally Satisfying	7	21	20	2	
49. Stimulating	4	18	24	4	
50. Motivating	6	28	14	2	
51. Responsibility	11	33	6		
52. Future Security	7	25	15	2	1

Sub-question #4 – Negative Attitudes toward Apprenticeship Careers.

Questionnaire statements 25, 26, and 44 relate to this sub-question, and the results are displayed in Table 19. Twenty-three (46%) believe that the majority of work associated with apprenticeship careers is manual in nature, 13 (26%) stated they didn't know, and 14 (28%) disagreed. The sub-question #1 statement on manual labour indicated that only 12 (24%) are interested in this type of career, while 23 (46%) are not. Related to this manual labour issue, 9 (18%) believe the work is dirty work, 15 (30%) don't know, and 26 (52%) disagreed. One (2%) student believes that apprenticeship careers are for those students with low high school marks.

It appears that the impression that apprenticeship careers are mostly manual labour is the major negative attitude influencing career decisions. Robertson (1998) and her assertion that "apprenticeship suffers from a sigma" support this. The term is associated with "blue collar" or manual work, and "we have a culture in Canada that does not respect the skilled trades" (p. 9).

Table 19

Negative Attitudes toward Apprenticeship Careers

Attitude Statement #	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
			Students (n = 50)		
25. Manual Labour	2	21	13	12	2
26. Low High School Marks		1	6	24	19
44. Mainly Dirty Work		9	15	22	4

Summary

Analysis of the interview and questionnaire data has identified and quantified the attitudes influencing the career decisions of new high school graduates in general, and towards apprenticeship careers in specific. The data has also revealed that the majority of these new graduates appear to have devoted little time or thought towards their career decisions. This is especially indicated by the comments made during the focus group interview sessions. Regarding the focus of this study, apprenticeship careers, there appears to be minimal awareness or knowledge about them or on how the apprenticeship training system functions. In addition, many students believe that the work associated with apprenticeship careers is mainly manual in nature, and that they are not interested in this type of career. This data suggests that career pathways that involve attendance at a college or university tend to have a significantly higher focus.

Chapter 5 – Discussion and Interpretation of the Findings

Introduction

> The structure of the major adolescent socialization institution – the school – imposes a rigid time schedule upon its charges. There is a time to pass from junior to senior high school, to pick a curriculum, to leave secondary school and pursue either higher education or a vocational career. These decisions are made or actions are taken when the dictated time arrives regardless of whether they are determined by interests or imposed from without. (Cook & Alexander, 1979, p. 35)

The research findings suggest that many new high school graduates are ill prepared or equipped to make informed career decisions regarding the numerous career opportunities available to them. This chapter will discuss these findings, identify new initiatives currently in progress to address the issue of the low participation rate of new high school graduates in apprenticeship careers, and make recommendations regarding further action and research.

Discussion of the Findings

The primary purpose of this research study was to identify the attitudes of new high school graduates that influence their decisions to pursue or reject apprenticeship careers as first choice vocations. The ultimate goal being to provide new information and insight to assist in developing strategies that will lead to increased participation in apprenticeship careers by new high school graduates. Hopefully, this will be one factor contributing to a reduction in the youth unemployment rate, and an increase in the skilled

labour supply required to meet the needs of the rapidly expanding technology based economies of Alberta and Canada, and a brighter and more productive future for these young people.

The findings suggest that awareness, or the lack of it, is the attitude that has the greatest impact on career decision making. The study contends that if an individual has no awareness of, or has no prior experience with a career sector, it is impossible to formulate additional positive or negative attitudes towards those particular occupations. As a result, those careers will not receive consideration as potential career opportunities. When the participants were asked about attitudes towards career choices in general, they were able to provide numerous positive and negative motivating factors influencing their behavior. However, when they were asked to focus on the particular career sector in question, i.e. apprenticeship, their ability to provide thoughtful and insightful information was greatly diminished. The study also contends that the same result would have occurred if the study had focused on other career sectors. This is supported by comments made during the interview sessions, and the findings of Kotrlik and Harrison (1968) and Cook and Alexander (1979). They suggest that approximately 75% of high school students were unable to "articulate their thinking with sufficient detail" regarding their career decisions (Cook & Alexander, 1979, p. 276). This leads to the conclusion that many new high school graduates have devoted minimal time, effort, and research in making their career decisions, and probably rely heavily upon others to influence their decisions, i.e. school counsellors, peers, and parents. However, this conclusion contradicts the questionnaire findings where 60% stated that family or friends would not have an influence on their choice of career.

Of the students in the 10-20-30 academic stream participating in this study, 12% indicated they were planning to attend university and 8% were planning to attend college. For the 13-23-33 stream, 2% of students were planning to attend university and 11% were planing to attend college. Looking at the entire sample, 20% were planning to attend university, 37% were planning to attend college, 7% were planning to attend technical school, and 10% were planning on pursuing an apprenticeship career. This data is supported by Hecht and Traub (1974) and Herr and Cramer (1979) who conclude that high school counseling and career guidance focus on university and college as the preferred career path.

Many programs of study at our universities and colleges are not occupational specific, but focus on providing a general and/or liberal arts education. Technical school and apprenticeship programs are just the opposite. Their programs are very occupation specific. This suggests that many university and college programs are career exploration activities, while technical school and apprenticeship programs are career specific activities. In today's environment of high tuition fees and the other associated financial demands of obtaining a university degree or college diploma, is it in the best interests of our youth and society to over promote this type of career exploration? This is not to suggest that a liberal arts education is not a worthwhile pursuit, or that the province and country do not require graduates from these programs. Obviously we do. What needs to happen is a change in the ratio of new high school graduates who attend university and college, and those who continue on to technical school and apprenticeship. This ratio needs to better reflect the needs and career opportunities available in our economy. In his November 26, 1999 keynote address to the Careers The Next Generation Conference in

Edmonton, Dr. Roger Goodman made the following comment. "Alberta's unemployment rate is not the result of a lack of jobs, it is a product of people with the wrong skill set."

Apprenticeship education and vocational education are often viewed as synonymous. The apprenticeship participation rate data is supported by Herr and Cramer (1979) who state that vocational education is perceived as the "second class alternative for those with low verbal skills or for those with interests in working with their hands rather than with their minds" (p. 278). As a result few students are willing to pursue apprenticeship careers as first choice vocations. They do not want to be labeled as second class, or appear to be less successful than their peers. **(See Figure 1)**

Sharp (2000) states that "there is a perception that the word "vocational" [sic] represents lower-level skills and programs" and "has consistently been viewed as indicating a direction other than toward a college education, and not where parents would like to see their children going..." (p. 3). Ted Langford, President of Portage College (formerly Alberta Vocational College, Lac La Biche), stated that in response to this perception to the term vocational, the college made a decision during their strategic planning process to exclude the term from its new name with the transition to board governance from being a provincially administered institution. Related to this, the American Vocational Association has recently changed its name to the Association for Career and Technical Education, and the Canadian Vocational Association is under pressure from its members to consider a similar move.

The researcher believes that the academic vs. vocational paradigm that has governed the decision-making in our school system for many years is the major contributing factor to the current perceptions toward the term vocational and related

educational pursuits, i.e., apprenticeship. This paradigm must be laid to rest, and the attitudes that created and promoted it changed before any meaningful change can occur.

> Educational policy formation has become the monopoly of college and university graduates who appear to believe that academic excellence must be described primarily in terms of the kinds of education which they experienced. The great debate about excellence in education is closer to a monologue of the one-sided opinions of well-meaning individuals and groups who have little contact with non-baccalaureate-degree America. (Parnell, 1985, p. 6)

> The most serious educational tension is a self-induced program fragmentation that focuses primarily on either an academic or vocational education track. For those students who do not fit comfortably into one or the other, we offer an unfocused general-education track leading to nowhere. (Parnell, 1985, p. 25)

School success should cease to be solely measured based upon the number of graduates who achieve university entrance, but instead should be based upon the numbers of students who successfully make the transition from school to work. All careers sectors must be respected and valued as worthy of pursuit and recognized as first class first choice careers by new high school graduates, parents, teachers, school counsellors, and society. Educational funding and curriculum requirements should undergo further change in order to reflect this reality.

New Initiatives and Programs

Career and Technology Studies

A number of initiatives and programs have been instituted over the past three to five years to address the career awareness issue and its impact on the skilled labour shortage and youth unemployment. The most important and far-reaching of these has been the development and implementation of the Career and Technology Studies (CTS) curriculum into Alberta high schools. This curriculum replaces the practical arts/vocational education offerings that were previously available. All high school graduates must now have a minimum of 10 credits in CTS and/or Fine Arts or Second Languages. **(See Appendix B)** Previous graduation requirements did not mandate any practical arts courses.

In the past the practical arts/vocational education programs were seen as the exclusive domain of the non-academic student. Few academic students were advised or even allowed to take any of these courses and gain the valuable career exploration experience they offered. This has certainly been the researcher's experience during his tenure as an instructor. **(See Curriculum Vitae)** As a result, despite millions of dollars being spent establishing well-equipped facilities throughout the province, the student success rate was significantly less than hoped for. Many schools began to close down their shops because there was insufficient student success and credits earned to justify the continued expense. Was this a curriculum-centered problem or a student-centered problem? Again from extensive personal experience, the researcher contends that it was a student-centered problem, with the academic vs. vocational paradigm as the culprit. Too few academic students were registered in these programs because they were viewed

as irrelevant to their futures. A university education was and still is more valued. Another contributing factor was and still remains the misconception that academically challenged individuals can become skilled trades persons. This simply is not true. Unfortunately, the apprenticeship system has been instrumental in propagating this belief. For many years the minimum educational requirement for most apprenticeship programs was grade nine, with some trades requiring additional prerequisites and others requiring all candidates to write entrance exams. There was a misconception that the grade nine requirement meant having completed grade nine instead of the candidate being functionally literate at the grade nine level if a literacy test was administered. Many grade nine graduates function at a literacy level lower than a grade nine. For example, the Registrar's Office of Portage College advises that approximately 30% of academic upgrading program applicants writing the Canadian Adult Achievement Test (C.A.A.T. Level C) score at less than a grade nine functional literacy level. It is now virtually impossible to enter an apprenticeship career without a high school diploma. In some disciplines, i.e., electrical and telecommunications, employers are insisting on graduation from the 10-20-30 academic stream.

The new CTS curriculum, which began development in the early 1990s and was fully implemented provincially in the 1997/1998 school year, has 22 strands allowing students to gain exposure to the career field and explore the career opportunities available. The 22 strands are: agriculture, community health, communication technology, construction technologies, cosmetology studies, career transitions, design studies, enterprise and innovation, electro-technologies, energy and mines, fabrication studies, fashion studies, financial management, foods, forestry, information processing, legal

studies, logistics, management and marketing, mechanics, tourism studies, and wildlife. Each strand has a series of introductory, intermediate, and advanced courses available to the student. Each of these courses is a 25 hour one credit offering. In all there are over 600 courses in the CTS curriculum.

According to Jan Mills, Program Manager CTS Programs for Alberta Learning, 687,889 CTS credits were awarded in the 1998/1999 school year. Virtually every high school student in Alberta is participating in career exploration in one or more CTS strands. Of particular interest to this study is the number of credit completions in those strands that have directly related apprenticeship careers. In the 1998/1999 school year, 281,679 credits were awarded in these strands. This is 41% of the total number of credits awarded. This is a very positive step forward regarding career exploration, career awareness, and the development of positive attitudes towards apprenticeship careers, however more work remains to be done. The information processing strand was by far the most active with 184,711 credits (27% of the total) awarded. This may indicate that a large group of students is still being channeled towards the more *academic* route. An additional reason may be that all students have access to computer labs, while many schools do not have the required facilities and instructional expertise to deliver many of the other strands. In these cases schools need to realize the importance of providing these career exploration opportunities and develop collaborative partnerships with local businesses, community colleges, and other school divisions to facilitate student access to these strands. To facilitate this, Alberta Learning needs to increase the funding to these programs. Also, there is a shortage of qualified teachers for those strands related to apprenticeship careers. Additional incentives must be forthcoming from both Alberta

Learning (financial) and our universities (prior learning assessment and recognition) to encourage qualified trades persons to enter education degree programs and obtain the required instructional skills and certification. Currently, the University of Alberta, Faculty of Education allows for advanced standing (maximum of 15 credits) in the Bachelor of Education CTS program for applicants who possess an Alberta Journeyman Certificate or an Interprovincial Red Seal relating to one of the 22 career strands. The career strands and related trades are as follows:

- Agriculture – Landscape Gardener
- Construction Technology – Bricklayer, Carpenter, Communication Electrician, Ironworker, Lather-Interior Systems Mechanic, Plumber
- Cosmetology – Hairstylist
- Design Studies – Printing and Graphic Arts Craftsman
- Electro-technologies –Appliance Service Technician, Electrical Rewind Mechanic, Electrician, Electronic Technician, Power System Electrician
- Fabrication Studies – Boilermaker, Cabinetmaker, Gasfitter, Glazier, Machinist, Millwright, Sheet Metal Worker, Steamfitter-Pipefitter, Structural Steel and Plate Fitter, Tool and Die Maker, Welder
- Foods – Baker, Cook
- Mechanics – Agricultural Mechanic, Auto Body Technician, Automotive Service Technician, Heavy Equipment Technician, Motorcycle Mechanic, Recreation Vehicle Service Technician (University of Alberta, 2000, Brochure)

In addition to the career exposure received through the CTS curriculum, articulation agreements are in place with Alberta Apprenticeship and Industry Training,

granting advance credit for formal technical training in the following trade areas: automotive service technician, cabinetmaker, carpenter, cook electrician, electronics technician, hairstylist, and welder.

Registered Apprenticeship Program

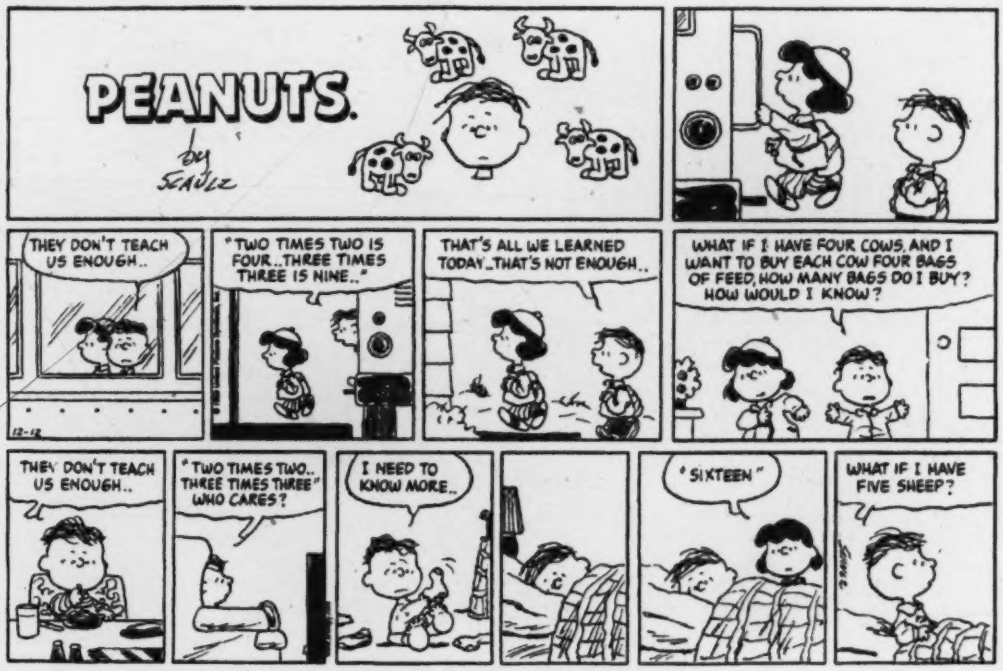
The Registered Apprenticeship Program (RAP) was implemented in 1994. This program allows high school students to find an employer and be indentured as apprentices in any of the apprenticeship careers while still attending high school. A contract/agreement is negotiated between the student, employer, and the school allowing the student the flexibility to work as an apprentice and continue with their high school education. The student is awarded high school credits (one for every 25 hours apprenticeship time) towards their high school graduation requirements in addition to receiving apprenticeship program work experience credit from their employer. Over the past four years, over 900 students and over 900 employers have participated in RAP, with 41% of these students remaining on track to complete their apprenticeship program. According to Tony Lovell of Alberta Apprenticeship and Industry Training, in the current 1999/2000 school year over 500 RAP students are registered in more than 30 apprenticeship career areas.

In addition to RAP, Alberta Learning introduced a pilot program, Career Internship 10 for the 1999/2000 school year. According to the program rationale and philosophy, the course is designed to support and prepare students with the basic workplace readiness competencies for entry into a trade, technology, or service career.

Tech-Prep Model

In 1985, Dr. Dale Parnell published his groundbreaking book, *The Neglected Majority*. In this book, he stated that 80% of high school students were unable to succeed due to a faulty education philosophy. He refers to these students as the neglected majority, and the faulty educational philosophy the academic vs. vocational paradigm previously discussed.

Figure 2. Peanuts Cartoon


PEANUTS.
by SCHULZ
THEY DON'T TEACH US ENOUGH..
"TWO TIMES TWO IS FOUR..THREE TIMES THREE IS NINE.."
THAT'S ALL WE LEARNED TODAY..THAT'S NOT ENOUGH..
WHAT IF I HAVE FOUR COWS, AND I WANT TO BUY EACH COW FOUR BAGS OF FEED, HOW MANY BAGS DO I BUY? HOW WOULD I KNOW?
THEY DON'T TEACH US ENOUGH..
"TWO TIMES TWO.. THREE TIMES THREE" WHO CARES?
I NEED TO KNOW MORE..
"SIXTEEN"
WHAT IF I HAVE FIVE SHEEP?

PEANUTS reprinted by permission of United Feature Syndicate, Inc.

To change the policies and create a new model for student achievement, Parnell (1985) recommended the development and implementation of the Tech-Prep model of applied learning. This model advocates the use of applied academics or "functional context education" where academic skills are "best learned in context and especially in

the context of realistic workplace problems" (Sticht, 1997, p.1). In order to assist those students who have difficulty learning the required academic concepts using the traditional abstract instructional strategies, both Parnell (1985) and Sticht (1997) believe learning must be made relevant by combining career exploration as a major component of the educational process.

In 1994, Parnell was a keynote speaker at the Canadian Vocational Association Conference in Banff, Alberta. As a result of his address at this conference, four central Alberta school divisions, Red Deer Public, Chinook's Edge Regional, Red Deer Catholic, and Wolf Creek Regional joined forces with Red Deer College and Olds College to form the Central Alberta Technology Preparation Consortium. This group developed and implemented a Technology Preparation Credential for high school students that combine a focus on applied academics and career exploration using the CTS curriculum. This credential is earned in addition to the Alberta High School Diploma. To earn the credential, students must achieve an average of 65% or higher in the following academic courses: English 33 or 30, Social Studies 33 or 30, Math 33 or 30 (applied or pure), and Science (Biology 20 or Chemistry 20 or Physics 20 or Science 20). All these courses are taught using applied curriculum, which focuses on relevancy to the real world. In addition the student must have three credits in Information Processing, 20 credits in a career cluster, 10 credits in Career Transitions (including a minimum of 200 hours of work experience related to the career cluster), and achieve the Standard First Aid Certificate. The four career clusters are technology studies, business services, human services, and the arts. This initiative has now expanded to include 43 Alberta school divisions and is now called the Alberta Technology Preparation Consortium.

Careers The Next Generation

The Careers The Next Generation Foundation began as a pilot project in 1994, and became a foundation in 1997. This foundation has the goal of creating collaborative partnerships between industry and schools to assist in bridging the gap between school and work. They have identified the following objectives in order to meet this goal:

- begin workforce development at an earlier age to help young people develop the required skills and assist them in making informed career decisions
- help young people find rewarding careers and better prepare them for the workplace and to adapting to change
- create community driven initiatives that focus on skill and educational issues
- help industry find the motivated skilled workforce needed to remain competitive

Its main focus is to assist in preparing students for the workplace by building practical and productive partnerships between school, employers, and students. These links in turn focus on connecting classroom learning to the workplace, like the Tech-Prep model, establishing relevance to the curriculum. This foundation has been instrumental in recruiting hundreds of Alberta businesses to the initiative, who in turn provide work experience and RAP opportunities to hundreds of high school students across the province.

A prime example of this program is a link established between J. A. Williams High School in Lac La Biche and Alberta Pacific Forest Industries. Two students from J.A.W.S are presently indentured as apprentices in the machinist trade through the RAP program at the ALPAC pulp mill located between Lac La Biche and Athabasca. The students attend technical training at the mill as well as obtain paid trade related work

experience. Upon graduation from high school they are guaranteed a continuing apprenticeship position, and upon completion of their apprenticeship program and receipt of their journeyman certification will have an opportunity for full time employment at the mill. Currently the starting salary for certified journeyman at the mill is in excess of $60,000 per year plus benefits. Alberta Pacific covers all training costs.

Many different types of relationships have been established involving hundreds of students providing those essential career exploration opportunities. This assists in developing positive attitudes toward careers, which in turn influences the career decision-making process.

Ontario Initiatives

In Ontario, Magna International, the country's largest independent auto parts manufacturer has started a training program involving over a hundred students. These students are studying to be tool-and-die makers, millwrights, mould makers, and industrial electro-mechanics. They are paid between $8 and $15 per hour during training, and the company will hire the majority of graduates to full time positions. Company president Donald Walker, an engineer, said "Canada is sadly lacking in technical education and parents don't understand apprenticeships and the fact that they lead to rewarding well-paid careers in clean safe plants" (Auto parts, 1999, p. K11).

Also in Ontario, a new magazine for teens in grades 7 to 12 called *HiTech Careers for the 21st Century*, is being published and distributed free to high school students. "With Canada's high tech skills shortage expected to increase, HiTech Careers for the 21st Century will help address the problem by reaching students at a time when they are preparing to make career choices" (Teen mag, 1999, p. 8). The magazine

features articles on cool jobs, profiles on successful young entrepreneurs, timely tech stories, games, a comic strip featuring hitech superheroes, and much more to capture student attention and interest.

All of the initiatives discussed here have a common goal, to increase the awareness of high school students regarding the career opportunities available in the skilled trades and technologies. This increased awareness will in turn nurture the development of positive attitudes toward these careers, and assist our youth in making informed career decisions.

Recommendations for Further Study and Action

The researcher recommends the consideration of the following studies to continue the process and further add to the knowledge base:

1. A study by Alberta Learning involving high school students involved in CTS strands related to apprenticeship careers, Careers The Next Generation, Tech-Prep, and RAP as to their career plans. The purpose would be to determine whether or not these initiatives are having the desired effect on participation in apprenticeship careers immediately after high school graduation. This should provide the necessary data to support expansion plans and/or changes to these programs.
2. A repeat of this study from two additional perspectives. Utilize a sample of high school teachers and career counsellors, and a sample of parents of Grade 12 graduating students to determine their attitudes toward apprenticeship careers. Although the study sample indicated that family and friends were not a major influence in career decisions, this is likely not entirely true. Youth of this age group

like to assert their independence and do not like to acknowledge the influence of others on their lives.

In addition to the above study suggestions, the researcher recommends the following actions:

1. At high school career days apprenticeship is represented, but usually only as a general presentation. From past experience, the researcher has found that students attending these events tend to gravitate to the more predominant career field sessions and ignore the apprenticeship presentation. In addition, usually the academically challenged students, not the 10-20-30 or 13-23-33 stream students that apprenticeship would like to attract, attend the apprenticeship sessions. The recommendation is to establish apprenticeship only career days in high schools across the province where as many of the individual apprenticeship careers as possible are represented. This would enable more students to explore the career opportunities available through apprenticeship than would normally be exposed. This would also be an excellent opportunity for school counsellors, teachers, and parents to explore the variety of careers available and develop positive attitudes towards them.
2. For many schools, especially in rural Alberta, the opportunity to offer apprenticeship career related CTS courses is limited by the availability of both physical and human resources. Alberta Learning needs to assist these school divisions in establishing partnerships with other divisions, local business, and area colleges to facilitate access to these programs. An example of this type of partnership is the arrangement between Portage College and J. A. Williams High School both located in Lac La Biche. For the past 15 years, students from J.A.W.S have attended classes at the

college in programs including building construction, drafting, fabrication studies, foods, forestry, and mechanics. Over the years, students from each of these career disciplines have carried on to achieve journeyman certification, or in the case of forestry, technician certification.

3. The formation and maintenance of a pool of qualified teacher/instructors for the different CTS strands that could be utilized by resource challenged schools and/or school divisions on an as needed basis would assist with the human resource issue. This is an initiative that could be undertaken by school divisions working in cooperation with each other. According to Gerald McConaghy, University Liaison with the CTS Council of the Alberta Teachers Association, both the Universities of Alberta and Lethbridge are reporting low enrollments of CTS majors in their teacher education programs. One way to change this would involve the recruitment and education of qualified journeymen in each of the apprenticeship careers related to CTS strands.
4. The career field expertise available in the province's college system should be further tapped and utilized in designing and producing distance learning modules that would then be available to schools in both print and/or electronic formats. According to Alberta Learning, distance learning materials are currently available in only five CTS strands related to apprenticeship careers. Some of these have been developed by post-secondary institutions and others by school divisions. The colleges could also respond to the needs of high schools by offering CTS strands utilizing both synchronous and asynchronous distance education technologies. This would provide access to all strands to any high school student in the province. Colleges and

technical schools could also be utilized as gathering points to provide students from all over the province the opportunity for practical application of their new skills. This is an excellent student recruitment strategy for the participating institutions. For example in the 1998/99 academic year, 1/3 of the welding class at Portage College were students who had attended classes at the college through the partnership with J. A. Williams High School in Lac La Biche.

5. Alberta Learning, Apprenticeship and Trade Certification should develop and administer a Point of Entry Survey to all new apprentices to determine the following information:
   - What did they do immediately after high school graduation.
   - What was their first choice vocation and why.
   - Have they attended or completed any other post-secondary programs.
   - How did they find out about apprenticeship and why did they choose it.
   - Who if anyone had an influence on their decision to enter an apprenticeship.

   This information would be valuable to the department in focusing its information dissemination and recruitment strategies.
6. This last recommended action will likely be the most difficult to achieve. The researcher believes a change is needed in the type of certification granted upon completion of apprenticeship. Apprentices who complete a two-year program should be granted the equivalent of a college certificate, and those who complete three or four-year programs the equivalent of a college diploma. The time spent during the on the job training portion of the apprenticeship program must be viewed and acknowledged as similar or equivalent to time spent in the traditional classroom or

science laboratory. College diploma status would go a long way in changing the perception of apprenticeship as being a non-academic pursuit, and would entice more academically qualified candidates to consider entering the career field.

Final Comments

The study has found that new high school graduates lack the awareness about the many careers available through the apprenticeship training system. As a result they have not had the opportunity to develop positive or negative attitudes toward these career opportunities. Since attitudes guide our behavior, it is no mystery why so few new high school graduates are choosing to pursue an apprenticeship career as a first choice vocation. Our school system must assume its share of the blame due to the academic vs. vocational paradigm that has guided policy making over the years. The researcher also believes this is the result of a lack of awareness (and the absence of positive attitudes) of the true nature of apprenticeship careers by many of our policy makers both provincially and in individual schools.

The new initiatives currently in progress are a major step in changing the situation and improving and hopefully changing some of the prevailing attitudes. After all, the futures of our young people are at stake, and we can no longer afford to neglect the needs of close to 80% of our high school students who will not proceed on to university or college. Hopefully, in a few years our schools will proudly acknowledge those graduates who have gone on to be certified journeyman with the same enthusiasm they acknowledge their university and college graduates, and a parent may say with pride, "My daughter/son is a certified journeyman."

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Appendix A

Trades and Occupations by Designation Status, Alberta, 1996					
Trade	**Certification**	**Red Seal**	**Trade**	**Certification**	**Red Seal**
Agricultural Mechanic	O	•	Landscape Gardener	O	
Appliance Serviceman	C	•	Lather-Interior Systems Mechanic	O	•
Auto Body Technician	C	•	Locksmith	O	
Automotive Service Technician	C	•	Machinist	O	•
Baker	O	•	Millwright	O	•
Boilermaker	C	•	Motorcycle Mechanic	C	•
Bricklayer	C	•	Painter & Decorator	O	•
Cabinetmaker	O	•	Partsman	O	•
Carpenter	O	•	Plumber	C	•
Communication Electrician	O		Power Lineman	O	•
Concrete Finisher	O	•	Power system Electrician	O	
Cook	O	•	Printing & Graphic Arts Craftsman	O	
Crane & Hoisting Equipment Operator	C	•	Recreation Vehicle Mechanic	C	
Electrical Rewind Mechanic	O	•	Refrigeration & Air Conditioning Mechanic	C	•
Electrician	C	•	Roofer	O	•
Electronic Technician	C	•	Sawfiler	O	
Elevator Constructor	C		Sheet Metal Worker	C	•
Floorcovering Installer	O	•	Sprinkler system Installer	O	•
Gasfitter	C		Steamfitter-Pipefitter	C	•
Glassworker	O	•	Structural Steel & Plate Fitter	O	•
Hairstylist	C	•	Tilesetter	O	
Heavy Equipment Technician	C	•	Tool & Die Maker	O	•
Instrument Mechanic	O	•	Transport Refrigeration Mechanic	O	
Insulator	O	•	Water Well Driller	O	
Ironworker	C	•	Welder	C	•

• Interprovincial Standards Red Seal Trade.

Totals: 19 Compulsory Certification Trades, 31 Optional Certification Trades, 38 Red Seal Trades **C - Compulsory O - Optional**

Note: Gas Utility Operator, Plasterer and Warehousing are Designated Occupations under Section 36 of the Alberta Apprenticeship and Industry Training Act.

(Apprenticeship and Industry Training Board, 1996, p. 4)

Appendix B

Alberta High School Diploma Graduation Requirements

The following information comes from the Alberta Education, ECS to Grade 12 Handbook, January 1997, and applies to students who entered Grade 10 in the 1994 - 1995 and subsequent school years:

To attain an Alberta High School Diploma, a student must:

- **earn a minimum of 100 credits**
- **complete and meet the standards of the following courses:**
  - ⇒ **English Language Arts 30 or 33 or Francais 30 or 33[1]**
  - ⇒ **Social Studies 30 or 33**
  - ⇒ **Mathematics 20 or 23 or 24[2]**
  - ⇒ **Science 20 or 24 or Biology 20 or Chemistry 20 or Physics 20[3]**

Note: Successful completion of a diploma examination is required for English Language Arts 30 or 33 or Francais 30 and Social Studies 30 or 33.

Note: For those taking Mathematics 30, Mathematics 33 and 30 level science courses, successful completion of a diploma examination is required. However, successful completion of these courses is not a condition of Alberta High School Diploma graduation requirements.

- **complete and meet the standards of the following:**
  - ⇒ **Physical Education 10 (3 credits)**
  - ⇒ **Career and Life Management (CALM) 20 (3 credits)**
  - ⇒ **10 credits, in any combination, from:**
    - **career and technology studies (CTS)**

      OR
    - **fine arts or second languages**[1]

      OR
    - **locally developed/acquired and authorized courses in CTS, fine arts or second languages**
- **earn in addition to English Language Arts 30 or 33 and Social Studies 30 or 33**[4]**:**
  - ⇒ **10 credits in any 30 level courses, including:**
    - **locally developed/acquired and authorized courses**
    - **6000 series courses (advanced level) in career and technology studies**
    - **35 level work experience**

---

[1] Students in francophone programs may present Francais 30 or 33 to meet their language arts diploma requirement. However, they must also present English Language Arts 30 or 33. These students can use English Language Arts 10-20-30 or 13-23-33 to fulfill the 10-credit diploma requirement from any combination of courses in the area of second languages, career and technology studies (CTS), fine arts or locally developed/acquired and authorized courses.

[2] The mathematics requirement - Mathematics 20 or 23 or 24 - may also be met with any 10-credit combination of mathematics courses that includes either Mathematics 13 or Mathematics 10; e.g., Mathematics 10 and Mathematics 14

[3] The science requirement - Science 20 or 24 or Biology 20 or Chemistry 20 or Physics 20 - may also be met with any combination of science courses that includes Science 10; e.g., Science 10 and Science 14. Agriculture 10-20-30 cannot be used to meet the science requirement.

[4] IOP students who wish to transfer to an Alberta High School Diploma route after completing a Certificate of Achievement must meet the requirements outlined in the text above. One 36-level course (10-credits) from any occupational cluster is acceptable for students transferring from the Integrated Occupational Program to the Alberta High School Diploma Program in order to meet the 10-credit requirement in any 30-level courses.

Appendix C

Compulsory Certification Trades (19)	Optional Certification Trades (31)
A person must be a certified journeyman or registered apprentice to work in the trade. *	A person does not have to be a certified journeyman or a registered apprentice to work in the trade. An employer can determine if a person is competent to work in the trade.
An apprenticeship training program is a combination of formal instruction and documented on-the-job training and work experience. Both are required to complete the program and be granted a certificate.	An apprenticeship training program is a combination of formal instruction and documented on-the-job training and work experience. Both are required to complete the program and be granted a certificate.
Industry provides the on-the-job training and work experience. This represents 80% of an apprenticeship program. It is documented through the use of an official record book.	Industry provides the on-the-job training and work experience. This represents 80% of an apprenticeship program. It is documented through the use of an official record book.
Government funds most of the cost of formal instruction. Formal instruction represents 20% of an apprenticeship training program. Government also provides other support. For example, the development of the course outlines, and provision of support to the industry advisory network are funded by government.	Government funds most of the cost of formal instruction. Formal instruction represents 20% of an apprenticeship training program. Government also provides other support. For example, the development of the course outlines, and provision of support to the industry advisory network are funded by government.
Regulations govern the requirements for employers to register apprentices, wages paid to apprentices on the job, and the ratio of journeymen to apprentices on the job.	Regulations govern the requirements for employers to register apprentices, wages paid to apprentices on the job, and the ratio of journeymen to apprentices on the job.

(Alberta Apprenticeship and Industry Training Board, 1998, p. 13)

* Others may work in a compulsory trade under certain circumstances. For example, some people have an authorization to work under Section 23 of the Act.

Appendix D

Letters of Invitation to Participate in the Study

Letter to Northern Lights School Division #69

Murray Scharfenberg
Box 126
Lac La Biche, AB
T0A 2C0

February 17, 1998

Name
Superintendent
Northern Lights School Division #69
6005-50 Avenue
Bonnyville, AB
T9N 2L4

Dear *Name*,

Re: Letter of Consent - Apprenticeship Careers Research Study

This letter is a follow-up to our telephone conversation on January 27. We discussed the possibility and procedures regarding my conducting a Master's Thesis research study in five high schools within your jurisdiction. The schools include: Bonnyville Centralized High School, Plamondon School, Glendon School, Grand Centre High School, and J. A. Williams High School. At that time, you gave me verbal permission to proceed with the planning of the study.

The study will examine the attitudes which influence new High School Graduates and their decisions to pursue or reject apprenticeship training and careers as first choice vocations. Current statistics indicate that less than 7% of males and 2% of females consider apprenticeship careers after graduation. This is an interesting and disturbing situation considering the high unemployment rate in the 17 - 25 age group, while at the same time the province is suffering from a significant shortage of skilled tradespersons.

The methodology utilized for data collection will include focus group interview sessions and focus group questionnaire sessions at each high school. Each session will involve a group of 6 -10 students drawn from a random sample from each graduating class. Only those Grade 12 students who are expected to graduate with a High School Diploma will be invited to participate; students in the Integrated Occupational Program

will be excluded. It is hoped that the study will involve from 60 - 100 students. Individual students will be invited to participate in an interview or questionnaire session, but not both, and asked to commit 30 - 45 minutes of their time. Participation by the students is strictly voluntary, and they may withdraw from the study at any time.

The research will be conducted during the lunch break of a regular school day so as to have minimal or no disruption to the students' regular class schedule. No time commitment is required by school division staff. I hope to begin the research with a pilot interview session in June of this year, and complete the data collection in April, May and June of 1999.

If you are in favor of the school division participating in this research study, I request that you sign the attached Letter of Consent, and return it to me in the envelope provided. This letter is required by the University of Alberta's Ethics Review process, and once the study has received final approval, you will receive official notification as well as a copy of the full research proposal.

If you require further information, please do not hesitate to contact me at 623-5621 or e-mail at: murray.scharfenberg@avcllb.ges.ab.ca Thank-you for your cooperation and assistance with this project.

Yours truly,

Murray Scharfenberg

Attachment: Letter of Consent

Letter to Participating High Schools

Murray Scharfenberg
Box 126
Lac La Biche, AB
T0A 2C0

March 1, 1998

Name
Principal
Name and Address of
Participating School

Dear *Name*,

Re: Letter of Consent - Apprenticeship Careers Research Study

This letter is a request for your permission to conduct a Master's Thesis research study on apprenticeship careers in your high school. The intent is to conduct this research study in the following high schools within Northern Lights School Division #69: Bonnyville Centralized High School, Ecole Plamondon School, Glendon School, Grand Centre High School, and J. A. Williams High School. Permission has been granted by the school division to proceed with this project. (See attached Letter of Consent)

The study will examine the attitudes which influence new High School Graduates and their decisions to pursue or reject apprenticeship training and careers as first choice vocations. Current statistics indicate that less than 7% of males and 2% of females consider apprenticeship careers after graduation. This is an interesting and disturbing situation considering the high unemployment rate in the 17 - 25 age group, while at the same time the province is suffering from a significant shortage of skilled tradespersons.

The methodology utilized for data collection will include one focus group interview session and one focus group questionnaire session at each school. Each session will involve a group of 6 -10 students drawn from a random sample from each graduating class. Only those Grade 12 students who are expected to graduate with a High School Diploma in the current school year will be invited to participate; students in the Integrated Occupational Program will be excluded. It is hoped that the study will involve from 60 - 100 students. Individual students will be invited to participate in an interview or questionnaire session, but not both, and asked to commit 30 - 45 minutes of their time. Participation by the students is strictly voluntary, and they may withdraw from the study at any time.

The research will be conducted during the lunch break of a regular school day so as to have minimal or no disruption to the students' regular class schedule. No time commitment is required by your school staff. The only request would be for the use of a classroom. I hope to begin the research with a pilot interview session in June of this year, and complete the data collection in April, May and June of 1999.

If you are in favor of your school and students participating in this research study, I request that you sign the attached Letter of Consent, and return it to me in the envelope provided. This letter is required by the University of Alberta's Ethics Review process, and once the study has received final approval, you will receive official notification as well as a copy of the full research proposal.

If you require further information, please do not hesitate to contact me at 623-5621 or e-mail at: murray.scharfenberg@avcllb.ges.ab.ca Thank-you for your cooperation and assistance with this project.

Yours truly,

Murray Scharfenberg

Attachment: School Division Letter of Consent

Appendix E

Letters of Consent to Participate in the Study

School Division Letter of Consent

Letter of Consent

Apprenticeship Careers Research Study

Northern Lights School Division #69 grants permission for Murray Scharfenberg, a graduate student (Master of Education) in the Faculty of Education, Department of Educational Policy Studies, University of Alberta, to conduct a research study within the following schools in the division:

- Bonnyville Centralized High School
- Plamondon School
- Glendon School
- Grand Centre High School
- J. A. Williams High School

This consent is further subject to the following conditions:

1. The School Division reserves the right to withdraw permission at any time.
2. The individual school principals have the right to grant, refuse or withdraw consent for this study at their discretion.
3. Each student will receive a Letter of Invitation/Consent to participate in the study which explains the purpose and nature of the research as well as the methodology to be used.
4. Student participation is strictly voluntary, and each student retains the right to withdraw from the study at any time.
5. Underage students will require the signed consent of parents/guardians.
6. Student participation is under the conditions of complete anonymity and confidentiality.

Signed, Date _____

_____

Name
Superintendent
Northern Lights School Division #69

Letter of Consent Participating Schools

Letter of Consent

Apprenticeship Careers Research Study

Participating High School grants permission for Murray Scharfenberg, a graduate student (Master of Education) in the Faculty of Education, Department of Educational Policy Studies, University of Alberta, to conduct a research study within the school.

This consent is further subject to the following conditions:

1. *Participating High School* reserves the right to withdraw permission at any time.
2. Each student will receive a Letter of Invitation/Consent to participate in the study which explains the purpose and nature of the research as well as the methodology to be used.
3. Student participation is strictly voluntary, and each student retains the right to withdraw from the study at any time.
4. Underage students will require the signed consent of parents/guardians.
5. Student participation is under the conditions of complete anonymity and confidentiality.

Signed, Date _____

_____

Name
Principal
Participating High School

Appendix F

Student Letter of Invitation to

Participate in the Study

Murray Scharfenberg
Box 126
Lac La Biche, AB
T0A 2C0

January 4, 1999

You Are Invited to Participate!

Re: Apprenticeship Careers Research Study

Dear Student,

Your school has agreed to participate in a research study on the career decisions of new high school graduates, and in particular those careers involving apprenticeship training. Since you are graduating this year, I would like your input. If you could give me approximately one half hour of your time and join six to eight of your classmates to answer some questions in an interview or questionnaire session, it would be greatly appreciated. The session will be scheduled at your school during regular school hours, so no extra time is required on your behalf. Also, no pre-session preparation or study is needed. Your participation in this study is strictly voluntary, absolutely anonymous, and you are free to withdraw at any time. Your comments will be held in the strictest confidence.

If you would like to help out, please sign the enclosed letter where indicated, and forward it to me in the envelope provided ASAP. If you're under 18, I'll need your parents/guardians signature as well. If you agree to participate, you'll be contacted by telephone with the details of our get-together. Your session will occur sometime during the months of February to May in order to interfere as little as possible with your schoolwork.

Please note that this invitation has been sent to you by your school on my behalf, in order to comply with the Freedom of Information and Protection of Privacy Act legislation.

Thank-you for considering to join the study, and I look forward to meeting with you in the near future. Please do not hesitate to contact me if you require further information.

Yours truly,

Murray Scharfenberg
(403) 623-3001
scharfen@telusplanet.net

Appendix G

Student Letter of Agreement to

Participate in the Study

Agreement to Participate

Apprenticeship Careers Research Study

I _____ agree to participate in the Apprenticeship Careers Research Study, and acknowledge that my participation is strictly voluntary, anonymous, I am free to withdraw at any time, and that my comments will be held in the strictest of confidence.

Date _____

Signature _____

Address _____

_____

_____

Phone _____

I _____ agree to allow my son/daughter to participate in the Apprenticeship Careers Research Study. I acknowledge that his/her participation is strictly voluntary, anonymous, he /she is free to withdraw at any time, and that his/her comments will be held in the strictest of confidence.

Date _____

Signature _____

Appendix H

Ethics Review

DEPARTMENT OF EDUCATIONAL POLICY STUDIES

Research Ethics Review Application – Graduate Student Form

Name Murray Scharfenberg Student I.D. 922035

Short Title of Study Apprenticeship Careers Research Study

____ M.Ed. Project ____ Ph.D. Thesis ____ Ed.D. Thesis

__X__ M.Ed. Thesis ____ Other _____

Members of the Supervisory Committee: _____

_____

The applicant agrees to notify the Department Research Ethics Review Committee of any changes to research design after the application has been approved.

_____ _____ 1998
(Signature of Applicant) (Date)

The supervisor of the study approves submission of this application to the Research Ethics Review Committee.

_____ _____ 1998
(Signature of Supervisor) (Date)

For Office Use Only

Date Submitted _____ Date Decision Conveyed _____

Members of the Review Committee _____

_____

Decision of the Committee _____ _____ 1998
(Approved/Not Approved) (Date)

Comments: _____

_____

_____
(Coordinator's Signature)

EDUCATIONAL POLICY STUDIES

ETHICS REVIEW FORM

Applicants Name: Murray Scharfenberg

Short Title:
Apprenticeship Careers Research Study

Date Distributed: _____ Date Returned _____

Assessment (check each item)	Yes	No
1. Does the researcher provide a clear statement of what is to be done?	____	____
2. Has the matter of informed consent of participants been attended to and have consent forms been attached?	____	____
3. Has the right to opt out (at any time) been provided?	____	____
4. If underage or other "captive" participants are used, has the "opt out" right (elsewhere known as veto-right) of these participants been attended to and have consent forms been attached where appropriate?	____	____
5. Are the procedures for providing anonymity/ confidentiality acceptable?	____	____
6. Has assurance been given that the study will not be threatening to the participants or other (third party)?	____	____
7. Is the instrumentation provided and /or the testing/ experimental procedure clearly specified and has an instrument and/or sample questions been attached?	____	____
8. Has provision been made for explaining the nature and		

purpose of the research to subjects (assurance provided that deception will not be used? _____ _____

Reviewer's Recommendation:

_____ Approve

_____ Acceptable if researcher satisfies the following conditions: _____

_____

_____ Further consideration by committee required

_____ _____ 1998

Signature Date

DESCRIPTION OF PROJECT AND PROCEDURES FOR OBSERVING ETHICAL GUIDELINES

Short Title: Apprenticeship Careers Research Study

Applicant: Murray Scharfenberg

Purpose:

This study will identify the attitudes of new high school graduates that influence their career decisions. In specific, it will identify and examine those attitudes that influence the decision to pursue or reject apprenticeship careers as first choice vocations.

Methodology:

In order to identify these attitudes, the study will utilize focus group interviews and focus group questionnaires for data collection. The interview and questionnaire sessions will take place in five high schools in the jurisdiction of Northern Lights School Division #69. Each school will have one interview and one questionnaire session involving separate samples of 6 - 10 students. The student samples will be randomly selected from the Grade 12 graduating class.

Nature of Involvement of Human Participants:

In total, 60 - 100 students will be involved in the study. Each participant will be randomly selected (name drawn from a hat) from graduating class lists provided by each participating high school. The selected students will receive a letter of invitation asking them to participate in the study in either an interview or questionnaire session. All sessions will be held at the students respective high schools during lunch break. To facilitate and encourage participation during this time, and as a gesture of thanks for their assistance, the researcher will provide lunch.

Are underage or "captive" participants involved? __x__ Yes _____ No
If "yes" provide details (Please attach any consent forms to be used.)

Since the study will be using high school students (Grade 12) as research subjects, it is likely that a number of them will not be 18 years of age. There will be no "captive" participants, participation in the study is strictly voluntary.

Please describe clearly the specific procedures for observing the University of Alberta ethical guidelines for research involving human participants.

1. Explaining purpose and nature of research to participants:

   Explaining the purpose and nature of the study will be done in two ways:

   1. It will be stated in the letter of invitation to participate in the study sent to each student.
   2. At the start of each interview and questionnaire session, the researcher will review the purpose and nature of the study with all the participants.

2. Obtaining informed consent of participants: (Consent forms must be attached.)

Northern Lights School Division #69 and each of the five high schools have been sent letters requesting their participation in the study and a letter of consent requiring signature if they agree to participate.

Each student will receive a letter of invitation to participate in the study along with an agreement to participate letter requiring the signatures of the student and parents or guardians as required.

3. Providing for the right to opt out:

The right to opt out at any time is clearly stated in each of the letters of invitation to participate in the study, the letters of consent, and the letters of agreement to participate in the study. Also, at the beginning of each interview and questionnaire session, the researcher will advise the participants of their right to opt out and leave at any time during the process.

4. Addressing the anonymity and confidentiality issues:

The issues of anonymity and confidentiality are clearly stated in the letters of invitation to participate in the study, the letters of consent, and the letters of agreement to participate in the study. Other than the need to use the students full name and address on the letters of invitation to participate in the study, at no time will their full names be used; only the students first name will be recorded in the data collection activities.

Unless it is a requirement of the school division or the respective high schools, the names of the participating students will not be released to the respective administrations or any other parties.

The researcher will keep the lists of graduating students provided by each high school for sample selection in the strictest of confidence.

5. Avoiding threat or harm to participants or others:

The methodology used for this study requires the subjects to participate in a simple question/answer interview process, or to fill out a questionnaire. Participation is strictly voluntary, and the subjects are free to opt out and leave at any time they wish.

6. Other procedures relevant to observing ethical guidelines not described above (e.g., training assistants directly involved in data collection):

The only other procedure requiring contact with the participants will be to advise the participants of the date, time , and location of their sessions. This will be done by letter, and a follow-up phone call the night before the session.

No other persons will be involved in the data collection processes or have any contact with the participants.

APPLICANT: Please submit the completed application form together with a copy of the research proposal to the Graduate Secretary in the Department of Educational Policy Studies.

When the application has been reviewed, a copy of the form will be returned to the applicant. The copy of the proposal will be retained on file.

Appendix I

Apprenticeship Careers Research Study

Participant Information Sheet

The following information is requested for statistical purposes. Please place a check mark in the appropriate blank:

Gender: Female _____ Male _____

Age: 16 _____ 17 _____ 18 _____ 19 _____

Academic Stream: 10 – 20 – 30 _____ 13 – 23 – 33 _____

After graduation, I am planning to:

Attend University _____ Attend College _____

Attend Technical School _____ Enter into Apprenticeship _____

Enter the Workforce _____ Other _____

Appendix J

Apprenticeship Careers Research Study

Questionnaire

Part A: Personal Information - Please provide the following information by filling in the

O with the pencil provided:

Gender:	**Female**	**O**		**Male**	**O**		
Age:	**16**	**O**	**17**	**O**	**18**	**O**	**19**	**O**
Academic Stream:			**13-23-33**	**O**		**10-20-30**	**O**

Plans After Graduation:

Attend University	**O**	**Attend College**	**O**
Attend Technical School	**O**	**Enter Apprenticeship**	**O**
Enter Workforce	**O**	**Other**	**O**

Part B: Questionnaire - Using the following scale, select the response that best reflects your view by filling in the O with the pencil provided.

Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
SA	**A**	**DK**	**DA**	**SDA**
O	**O**	**O**	**O**	**O**

Example: I love ice cream.	**SA**	**A**	**DK**	**DA**	**SDA**
	O	**O**	**O**	**O**	**O**

	SA	A	DK	DA	SDA
1. My career must be interesting.	O	O	O	O	O
2. My career must be exciting.	O	O	O	O	O
3. My career must be personally satisfying.	O	O	O	O	O
4. My career must provide a high standard of living.	O	O	O	O	O
5. My family and friends must approve of my career choice.	O	O	O	O	O
6. My career must have prestige.	O	O	O	O	O
7. I want a career where I work with many people.	O	O	O	O	O
8. I want a career where the work is outside.	O	O	O	O	O
9. I want a career that is mostly manual labour.	O	O	O	O	O
10. I want a career where the work is diversified.	O	O	O	O	O
11. I want a career where I work with the latest technologies.	O	O	O	O	O
12. I want a career that involves further education or training.	O	O	O	O	O
13. I want a career that provides room for advancement.	O	O	O	O	O
14. I want a career that provides opportunities for change.	O	O	O	O	O
15. I want a career with many employment opportunities.	O	O	O	O	O

	SA	A	DK	DA	SDA
16. I want a career that is stimulating.	O	O	O	O	O
17. I want a career that is challenging.	O	O	O	O	O
18. I want a career that is motivating.	O	O	O	O	O
19. I want a career that requires a lot of critical thinking.	O	O	O	O	O
20. I want a career with responsibility.	O	O	O	O	O
21. I want a career that offers future security.	O	O	O	O	O
22. I know about the careers available through apprenticeship training.	O	O	O	O	O
23. I know how apprenticeship training works.	O	O	O	O	O
24. Apprenticeship careers are professional careers.	O	O	O	O	O
25. Apprenticeship careers are mostly manual labor.	O	O	O	O	O
26. Apprenticeship careers are for those students with poor high school marks.	O	O	O	O	O
27. Apprenticeship careers are restricted to the construction and mechanical trades.	O	O	O	O	O
28. Apprentices learn mostly by hands on experience.	O	O	O	O	O
29. Apprentices spend very little time in school.	O	O	O	O	O
30. Apprenticeship training is a combination of school and work.	O	O	O	O	O

	SA	A	DK	DA	SDA
31. Apprentices are paid to go to school.	O	O	O	O	O
32. Apprenticeship training takes 2 – 4 years.	O	O	O	O	O
33. Apprentices are guaranteed employment.	O	O	O	O	O
34. Apprenticeship careers provide a high standard of living.	O	O	O	O	O
35. Apprenticeship training involves one to one instruction.	O	O	O	O	O
36. Apprenticeship careers make it easier to have your own business.	O	O	O	O	O
37. Wages increase as you proceed through apprenticeship training.	O	O	O	O	O
38. Apprenticeship training provides valuable work experience.	O	O	O	O	O
39. Apprenticeship training provides the opportunity to cross train for different careers.	O	O	O	O	O
40. I would consider pursuing an apprenticeship career.	O	O	O	O	O
41. Apprenticeship careers have prestige.	O	O	O	O	O
42. Apprenticeship training provides career many opportunities.	O	O	O	O	O
43. My family would support my decision to enter an apprenticeship career.	O	O	O	O	O
44. Apprenticeship careers are mainly dirty work.	O	O	O	O	O
45. Apprenticeship careers are challenging.	O	O	O	O	O

	SA	A	DK	DA	SDA
46. Apprenticeship careers are interesting.	O	O	O	O	O
47. Apprenticeship careers are exciting.	O	O	O	O	O
48. Apprenticeship careers are personally satisfying.	O	O	O	O	O
49. Apprenticeship careers are stimulating.	O	O	O	O	O
50. Apprenticeship careers are motivating.	O	O	O	O	O
51. Apprenticeship careers have responsibility.	O	O	O	O	O
52. Apprenticeship careers offer future security.	O	O	O	O	O

Thank you for your assistance in this research study!

Curriculum Vitae

Personal Information:

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scharfen@telusplanet.net

Educational Background:

Bachelor of Education -1985

University of Alberta, Edmonton, AB

Major: Vocational Education

Minor: General Science

Certificate of Completion of Apprenticeship -1981

Certificate of Proficiency –1981

Interprovincial Red Seal –1981

Alberta Advanced Education and Manpower

Trade: Electrician

Employment History:

Coordinator – Career and Technology Studies Programs

Portage College (Formally Alberta Vocational College)

Lac La Biche, AB

September, 1985 – Present

- Supervise and/or instruct the following programs at the high school level: Construction Technology, Electricity, Fabrication Studies, Foods, and Mechanics.
- Instruct electrical modules for Power Engineering Programs.
- Develop and instruct related mathematics courses for the following programs at the college level: Culinary Arts, Mechanics, and Welding.
- Negotiate and manage contracts with Northern Lights School Division #69.
- Liaison for the college and Northern Lights School Division #69
- Manage the CTS program budget in regards to manpower and operational requirements.

Mathematics Instructor

NorQuest College (Formerly Alberta Vocational College)

Edmonton, AB

March, 1985 – April, 1985. August, 1985

- Instruct mathematics for Adult Academic Upgrading programs at Pigeon Lake Reserve, Wetaskiwin High School, and Edmonton Maximum Security Institution.

Electrical Coordinator

Electrical Estimator

Electrician

Cana Industrial Contractors Ltd.

Edmonton, AB

December, 1976 – August, 1982

- Liaison between contractor and electrical engineering department, Celanese Canada Methanol Project.
- Prepare estimates for numerous industrial projects.
- Installation of lighting, power and control, and instrumentation on the following projects: Coal Valley Coal Plant, Edmonton Journal Press Installation, Celanese Canada Vinyl Acetate Plant, Suncor Process Instrumentation, Celanese Canada Methanol Project, and Eckville Hospital.

Professional Development Activities:

Chairman, Portage College Academic Council

Member, Alberta Teachers' Association Career and Technology Studies Council

Member, Canadian Vocational Association

Past Chairman, Portage College Library Advisory Committee

Past Member, Portage College Technology Integration Plan Committee

Programmable Logic Controllers - SAIT

Investment in Excellence for the 90's - Pacific Institute, Seattle Washington

Building Productive Partnerships and Collaborative Programs - University of Alberta, Department of Extension